

# PEOPLE BUILT FOR ARCHITECTURE

KNOWING THE 'USER' WITH ARCHITECTURAL HANDBOOKS



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## **STATEMENT OF ORIGINALITY**

This is to certify that to the best of my knowledge, the content of this thesis is my own work. This thesis has not been submitted for any degree or other purposes.

I certify that the intellectual content of this thesis is the product of my own work and that all the assistance received in preparing this thesis and sources have been acknowledged.

Thomas Essex-Plath

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# ABSTRACT

Attempts to engender a 'user-oriented' architecture were a perennial occurrence during the 20th century, and remain so today; their success, however, is underwhelming. In this context, understanding how knowledge of the 'user' is constituted and incorporated into architectural practice, its obstacles and dimensions of success, and the ramifications of such a project become pertinent topics. In this thesis, I follow this imperative by examining a specific case of 'knowing the user': that involving ubiquitous architectural 'handbooks'. I ask how knowing the user is successfully accomplished with handbooks, taking two contemporary iterations, *Architects' Data* and *Architectural Graphic Standards*, as the loci for textual analysis. Employing an image of knowledge-as-ability and the extendedness of knowing, I account for the accomplishment of knowing in its distribution amongst assemblages orchestrated in practice. To articulate the composition of this 'knowing assemblage' I focus on two salient aspects, or dimensions of its success: its mobility and its stability within structures of meaning and significance. I propose the shape of this knowing (a prominently 'spatial' user and a 'secondary' status) is bound to the specificities and historicity of the complex of practices in which architectural labour transpires, and I situate it within a broader trajectory of the user, as an 'object of knowledge' thrown amongst the jostling agencies in architectural projects. This research adds to the sociological literature that has, focusing on the activity of architectural labour itself, worked to dispel reductionist myths of 'design' and depict the heterogeneous corpus of agents in this process. The picture of knowing I offer illustrates some of the complexities and sites of its negotiation, contributes to accounts that have sought to shift and complicate the agency of knowing, and serves to usefully orient further research into accomplishing knowing in architectural labour.

# ACKNOWLEDGEMENTS

Given that, in this thesis, I make a point of emphasising the distributed and extended character of agency and knowing, it seems all the more important to acknowledge the contributions of those without which this thesis would not have been produced. Thanks, firstly, to my supervisor, David Bray, and auxiliary supervisor, Lee Stickells. All their assistance in navigating and occupying the borders between sociology and architecture has been indispensable and immensely appreciated. This thesis also benefitted from a brief but invaluable discussion with Stephen Hetherington, for which I am very grateful. My indebtedness to Debbie Plath grows further from the support she has provided during this project, and for always somehow finding time to read and comment on a little extra. Finally, many thanks to Gemma Harben for both her patience and support, along with also often providing the most useful critique.



# INTRODUCTION

A common thread ties together the following brief selection of artefacts and events from the history of architecture: Meyer's (1970, p.119) 1928 manifesto positing twelve fundamental motives of building grounded in examining the routines "of everyone who lives in the house"; the concluding observations of the CIAM (1970, p.137) 1933 Charter of Athens which declared the destiny of cities is "to satisfy the primordial biological and psychological needs of their inhabitants"; the formation of the discipline of Environment-Behaviour Studies in the 1960s; the appointment of sociologists within departments of architecture (Gutman 1975, p.219); the 'people-minded' studio courses run by architect-educators like Denise Scott-Brown since the early 1960s (Scott Brown 1981); the emergence and global dissemination of the universal design movement (Imrie 2012); Jane Jacobs' inciting of collective opposition to projects in Greenwich Village; a host of major and minor reports and guidelines, such as *Homes for today and tomorrow* (Ministry of Housing and Local Government 1961), issued by governmental bodies; efforts to frame the relevance of contemporary neuroscience to architecture (Robinson & Pallasmaa 2015); the 'half-houses' of Elemental (Aravena 2011); and the architect's disposition to occasionally make assertions like "the social grouping in a dorm should not exceed 20 people" (Cuff 1992a, p.85). Though diverse and diverging sites, shared ground may justify collecting them, and others like them, under the umbrella of a loose project directed towards bringing a particular object to bear on the production of architecture - the object named variously in architectural discourse as the 'user', 'occupant', 'inhabitant', 'human beings', or, simply, 'people'.

Broadly speaking, this 'user' is those that use, occupy, inhabit, dwell or otherwise go about populating, being in, and interacting with the built environment. Advocacy for and attempts to establish a mode of architectural practice and a built environment where-in this 'user' is a determinative agent (an architecture that is 'user-centred' or 'human-oriented') has figured with particular prominence in the history of architecture for, at least, the majority of the 20<sup>th</sup> century, to the extent that at times it has taken a place "at the centre of [architects'] professional objectives" (Lipman 1970, p.15).

In part, this project has manifested in 'participatory design', itself a somewhat diverse practice involving wrangling future occupants into 'direct' involvement in the

design process (Blundell-Jones, Petrescu & Till 2005). Other, more contemporary, manifestations include advocacy for acknowledging the active contribution that users make to creating architecture, beyond traditional 'design' or 'construction' phases, with a role "as important" as the architect (Hill 2003, p.88). However, this project also, and perhaps more frequently and pervasively, manifests in calls for, and attempts to engender, the integration (or better integration) of *knowledge* (or better knowledge) of the user (see, for example, Fawcett 1996; Lerup 1974; Lipman 1976). This particular branch of this project to produce a so-called 'user-centred' architecture, concerned with the incorporation, integration, movement, and production of knowledge, is the focus for this thesis.

However, this project's success is far from overwhelming, and often somewhat local. Despite being a "generally held design objective" it has often remained "frustrated" (Lipman 1976, p.13). Though apparently gaining ground earlier in the 20<sup>th</sup> century and a particular fervour in the 1960s (Forty 2004a, p.313), more contemporary reports suggest that, in some regards, "architectural discourse and production ignores the user" (Hill 1998, p.6). That it, at least, does not enjoy a normative or given status in architectural practice is evident in, for example, the fact that firms employ an espoused 'user-oriented' status of their work as a marketable point of differentiation, via specialization in 'people work' (Montgomery 1989, p.276); Woods Bagot's "People Architecture" slogan exemplifies this (Woods Bagot 2018). This status is also evident in that types of advocacy made in the 1960s are still deemed necessary fifty years later, such as in the echo of the Architectural Review's (AR) 1969 "Manplan" campaign ('Manplan: Frustration' 1969) with a 2015 "Humanplan" editorial (Slessor 2015). That advocacy for and attempts to engender a 'user-centred' architecture often appear to be a perennial, rather than progressive, occurrence might seem to indicate the presence of some kind of general obstacle or obstacles to this project.

Indeed, to take the dialogue between architecture and sociology as an iteration of this project, the frequent occurrence of such obstacles is illustrated in reports from some of its prominent figures. Kostof (1989), reflecting on the trajectory of concerns for the user in educational programmes, paints a picture of its waxing and waning rather than one of any definite progress (see also Marmot & Symes 1985; Scott Brown 1981). Further, both Blau (1991) and Gutman (1975, p.220) proposed fairly fundamental incongruities between academic disciplines like sociology and the pragmatics of architectural labour, residing in the character of

these discipline's products (being too abstract or qualified) or the current state of development of this knowledge. The problem has also been located in the character of architectural students (Scott Brown 1981, p.44) and sociologists (Gutman 1968, p.13, 1975, p.220) and their proclivities to resist participation in each others core disciplinary practices and modes of thought.

Though Cuff (1992a, p.32, 32n10) remarks on the possibility that consolidating the integration of literature on "user needs" might aid architecture to overcome its troubling lack of a defined knowledge base and distinguish its product within the built environment, she additionally notes the apparent difficulties of this integration, despite the quantity of literature available. Indeed, Fawcett (1996) posits that it is this sheer volume of research which hampers its employment in practice.

Further, Blau (1984, p.x, 53) suggested that, despite finding a majority of architects wished to prioritise the needs of users, these efforts are often impeded by the realities of the market for architectural labour, to the extent that those who identified most strongly with this project felt, in the mid 1970s, most alienated from their work. She posited that major changes in the American economy were a precondition for 'user-centred' architecture to take hold. Blundell-Jones, Petrescu & Till (2005) have more recently reiterated this conflict between the realities of the market for architectural labour (subservience to a client) and a desire for 'user-oriented' architecture.

Such institutional, economic, or psychological dynamics reflected in these accounts are all useful contributions to understanding the success, or lack of, the project of embedding the user in architectural practice. This thesis, however, looks to focus at a different scale, the enactment of knowing in practice itself, to explore how the realities of accomplishing such performances in the context of architectural labour may bear on the possibilities for and resultant character of the knowing so constituted.

## **1.1 RESEARCH QUESTIONS**

Situated in this context, I propose the pertinence of investigating how knowledge of the user is constituted within architectural practice and, given this, how it is or might be incorporated. Or, put otherwise, how is it that 'knowing the user' is accomplished, and such accomplishments made generally present or spatio-

temporally dispersed in their reproduction in the world of architectural practice? This second formulation is most in accord with the conception of knowledge put forward in chapter two (see §2.3). Reframed in terms outlined there, it is to enquire into the composition of 'knowing assemblages', and how such assemblages are built and reproduced within the complex of practices that is architectural labour, what the elements of such compositions are, the associations wrought between them, their specificity, and their historicity.

In addressing a topic such as this, one might assume the intent to be to critique the conceptions or enactment of human beings within architectural practice, perhaps relative to more 'authoritative' views from academic disciplines. Though this has been undertaken previously (e.g. Spencer 2005) this, it is important to emphasise, is *not* my intent here.

There are innumerable ways that the user has been brought to bear on architectural production via 'knowing', and instances there-of. Attempting a large-scale account and generalization on the means of constituting such knowing would be a sizeable undertaking and is beyond the scope of this study. Thus, I examine one particular (relatively successful) knowing assemblage or mode of knowing the user: that of which the contemporary architectural 'handbook' is part, on the premise that useful insights into the more general phenomenon of 'knowing the user' may be gained via this notable case. Given the character of the foregoing discussion of the context in which this question is posed, this inquiry is obviously made with an eye to the apparent 'successes' in, or perhaps lack of and obstacles to, this particular mode. In doing so I also attend to how establishing such successes, within this specific context of practice, bears on the particular character or shape of the knowing accomplished.

Lastly, but far from least, to make this inquiry is also to attend to what it means for 'knowing the user' to be constituted within or incorporated into architectural practice, in the sense of the ramifications, implications, or the effects wrought, of such a process.

This intent to provide an account of the accomplishment of knowing the user in which the architectural handbook figures also runs in tandem with an overarching intent to establish direction and identify valuable sites for further research. This is addressed further in the concluding chapter.

## 1.2 THESIS STRUCTURE

To address these questions, I focus on two, closely intertwined, aspects, or dimensions of success, of this mode of knowing the user: the mobility of this knowing assemblage, and its stability within structures of meaning and significance. These are taken as valuable analytical sites in which the manner of composition and accomplishment of knowing, the interactions between the realities of the composition of knowing and the context of practice in which this composition is made, of its successes or obstacles there-to, and the outcomes of such processes are especially manifest. Thus, these two sites structure the main body of the thesis.

Prior to this, in chapter two I clarify some key concepts underlying the positions I take in this thesis: 'architecture', 'practice', and 'knowledge'. This also provides the space for a summary of the existing literature that centres on these key concepts and is relevant to the general argument of the thesis. These clarifications are also accompanied by a section addressing the methodologies of the research reported. This clarifies where in the thesis I outline and recount methods employed, and addresses some salient issues relative to the research questions posed.

Following this, I provide further material to introduce the 'user' in chapter three. The aim of this chapter is not to give a comprehensive account of the user or its history. Rather, it is to provide an elaboration on what it is to understand the user as an 'object of knowledge' within architectural practice. I draw on selected moments from the history of the user for this purpose, focusing especially on the entanglement of 'objects of knowledge' in the crowd of agencies jostling within architectural projects.

Within chapter four I move on to focusing on the composition of this particular knowing assemblage wrought about the 'handbook'. Firstly, I address mobility, elucidating the manner in which the successful accomplishment of knowing the user across varied sites is bound to the realities of movement and distribution of the components of knowing assemblages. Results of content analysis of contemporary architectural handbooks provide the initial ground for this account where I posit that the manner in which competencies are distributed and labour delegated amongst components, specifically relative to the extant character of the complex of practices that is architecture, provides the grounds for this mobility. As part of this account I illustrate the bearing this has on the character of the knowing constituted.

Continuing this account of the composition of this knowing assemblage, in chapter five I discuss certain ascribed meanings, set within broader structures of significance, as necessary to the successful accomplishment of knowing the user in architecture. Building on the results of discourse analysis, I posit that the stability (unproblematic and uncontentious status) of this particular mode of knowing the user, and of 'doing architecture' generally, is grounded in a 'schism' of architectural practice where various domains of labour are enacted as alternately 'primary' and 'secondary' relative to the enactment of the architect's agency within these.

Finally, I recapitulate and synthesize the analysis and descriptions offered in the preceding chapters within a final concluding chapter. Here, I draw out some overarching conclusions regarding the account constructed, along with implications and potential avenues for further research on this basis.

### **1.3 THE 'HANDBOOK'**

Given that 'knowing the user' with the contemporary architectural handbook is the focus for this thesis, it is pertinent to, firstly, introduce this genre, the 'handbook'. Innumerable and diverse cases of incorporating knowledge of the user into architectural practice abound, but often remain somewhat 'local' compared to the relatively widespread mode of knowing the user of which the handbook is part.

I employ this term 'handbook' throughout this thesis to refer to a corpus of texts that are to be found 'at-hand', as an element embroiled in the action constituting architectural labour. This definition will be elaborated and more precisely articulated in the chapters to follow, but here foregrounds that *it is to define these artefacts by how they are used* rather than, as is typical with texts, their 'content'. This definition may be regarded as somewhat idiosyncratic,<sup>1</sup> at least in so far as some texts that explicitly include "handbook" in their title (e.g. "The SAGE Handbook of Architectural Theory") would be excluded from this categorisation. I offer this definition not to circumscribe a definite genre of texts, but to identify a spectrum of 'handbook-ness': texts of a greater-or-lesser extent or frequency to be found in the thick of architectural labour. For instance, with this definition there may be some texts

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<sup>1</sup> Employing this term in this thesis in a somewhat idiosyncratic manner (and perhaps more broadly than might be the case in other venues - regarding its inclusion of an earlier corpus of texts) seems not unjustified given its use otherwise is far from strictly defined.

regarded as 'a bit handbook-ish' (or, only infrequently enacted as 'handbooks') such as the architectural monograph, when temporarily thrown from the coffee table into practice at the drawing board.

These 'handbooks', so defined, are also set off against other documents found in similar positions within architectural labour (e.g. standards, 'guides' produced by legislating authorities, development controls and applications, or manufacturers pamphlets and product information) to which they share a resemblance but from which they are distinguished on the basis of characteristics including the manner of publication and circulation, size, range of distribution of use, and their summative or compiling character.<sup>2</sup> Furthermore, with larger historical scope, this definition includes texts more diverse than those identified as 'contemporary' handbooks. It draws together a range of texts similarly found in the thick of architectural labour, known variously as genres of 'pattern books', 'copy books', 'books of designs', 'manuals', 'model books', or 'books of orders', among others. Making this categorisation is not to deny the variation amongst such texts in their content or subtleties of use, or between them and more contemporary handbooks. Nevertheless, their underlying commonality regarding the composition of agency through which architectural labour transpires is a foundation for the analysis made in this thesis and is argued as justified given that the genealogy of contemporary handbooks includes these predecessors. Though the contemporary handbook is the locus for this study, I address these earlier handbooks as part of this analysis.

This mode of knowing makes for a valuable case study based, in part, on its mundane and ubiquitous character. It illustrates that even the most seemingly stable and unproblematic knowing is no simple process. Undertaking research on a more established mode was, additionally, directed by the conjecture that directions may be garnered for studying comparatively 'local' modes of knowing and, perhaps, instances of knowing 'in the making'. Furthermore, the condition of 'distributed' or

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<sup>2</sup> Indeed, by the definition given, there is no hard distinction between these and 'handbooks' (as defined). Rather, it is a case of them falling outside a general family resemblance. This is to say, what are here regarded as 'handbooks' (or what distinguishes these from the similar texts noted) are those that are published by publishing organisations and circulate as commodities, are relatively large, and are used beyond local centres (e.g. those where a certain development control is applicable). Perhaps most important, however, is their 'bricolage' and summative character, in the sense that those texts regarded here as 'handbooks' most often subsume and compile the content of these other documents (e.g. standards, manufacturers information).

'extended' knowing underpinning this research project (see §2.3), and the ramifications for this for understanding 'knowing the user' in architectural practice, is particularly manifest in and well illustrated by this case.

Two of the most successful contemporary handbooks form the primary focus and material for analysis: Neufert's *Architects' Data* (Neufert & Neufert 2012), which has been through 41 German editions since its original publication in 1936, translated into 17 languages, is supposedly "known to every practising architect" (Graaf 2017, p.55), and was the best selling architectural publication in Germany in the twentieth century (Weckherlin 2007, p.150), while *Architectural Graphic Standards* (AGS), first published in 1932, is in its 12<sup>th</sup> edition and had sold over a million copies before the turn of the century (American Institute of Architects 2016) along with garnering the title of the "architect's bible" early in its history (Emmons 2005, p.15). Appraisals from leading lights of the profession, including Eero Saarinen (1956), Philip Johnson (2000), and Walter Gropius (1936), have attested to the magnitude of these books.<sup>3</sup>

This success, combined with their early publication dates, makes these two paradigms of the twentieth century architectural handbook. Though having the oldest pedigree, they are still ongoing projects. Their ongoing significance for the world of architecture is reflected in the status of the institutions which now administer their newer editions, the American Institute of Architects (AIA), in the case of AGS, and the dedicated Neufert Foundation with the support of the Dessau Bauhaus in the case of *Architects' Data* (Neufert & Neufert 2012, p.xii). Though not the only contemporary architectural handbooks analysed in the chapters to follow, it is the predominance of *Architects' Data* and AGS (primarily in Europe and the US, respectively) that justifies their status as the primary focus.

Additionally, their prominence is reflected in them being a focus for the small body of literature on the modern architectural handbook. This writing, however, has principally interpreted these texts as the expression of some 'ideology' of the author or the broader architectural or social context (see, for example, Emmons &

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<sup>3</sup> Saarinen (1956, p.v) declared AGS to be "an essential part of architectural practice" and Philip Johnson (2000, p.xv) furthered this, saying "I have always considered my Graphic Standards as important in design as is my pencil... No architect can be without Graphic Standards, and with it every architect is empowered and equipped to practice architecture". Similarly, no less than Walter Gropius (1936, p.173) remarked of *Architects' Data* that, after only a few months of use, he had found it to be now "indispensable" to his practice.



Mihalache 2013; Hosey 2001), or else of other general trends within these (e.g. Johnston 2008). This, generally speaking, is how texts are usually apprehended in social research, as expression of the agency of some other phenomenon (see §2.4). This is not, however, the approach I take. Rather, I examine them not as effects or expression of some external agency, but in what they themselves *do*, specifically in so far as this figures in the constitution of knowing. Though, it is important to make clear that *the topic for this thesis is not the 'handbook' per se, but the 'knowing assemblage' of which it is part.*

While the above may justify regarding *Architects' Data* and *AGS* as exemplary iterations of a 'successful' genre of artefact, this, it might be contended, does not necessarily justify them being regarded as part of a successful case of 'knowing the user'. That is, these are diverse texts, addressing many varied objects of knowledge, and their success as artefacts may not necessarily entail the success of the knowing of this *particular* object that figures within their pages – they may, simply, be used otherwise. However, this inference is justified, firstly, based on the importance of 'the user' (or 'man') to both Neufert's and Ramsey and Sleeper's formulation of their projects, as a locus for the content of the books generally.<sup>4</sup> Secondly, the user's prominent position in the ordering of content in the handbooks is both indicative of its relative importance to its authors and a source of its prominence to those who employ the texts.<sup>5</sup> Finally, evidence that *in their use* this object of knowledge retains this prominence (i.e. the books are not, instead, just employed to know the host of other objects represented) is in the character of their reception by those who employ them. The user figures prominently in descriptions given of *Architects' Data* and *AGS*, indicating the salience of enacting 'knowing the user' to

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<sup>4</sup> The genesis of *Architects' Data* was in an initial pamphlet, *Mensch als Mass und Ziel* ('Man as measure and purpose'), that clearly foregrounds the centrality of this particular object of knowledge (Harwood 2012, p.75). Likewise, Ramsey and Sleeper stated the first of three classes of subjects in their book proposal for *AGS* as "Data, standards and dimensions *fixed by the human scale*" (cited in Johnston 2008, p.151, emphasis added). For both texts, 'man', 'the human', or 'the user' was, evidently, a prominent object to be known and, further, on which knowledge of other objects was to be grounded.

<sup>5</sup> Over the numerous editions of both *Architect's Data* and *AGS*, specific sections on the user ('man', or 'human') have featured early in the sequence of material in the texts (foregrounding this particular object) or, in earlier editions of *AGS*, in the easy-reference sections on most essential data at the end of the book. It also, despite having its own section, is additionally dispersed throughout most of the sections of the handbooks, rendering it a somewhat pervasive object and providing, as Neufert says, 'measure and purpose' to other areas of knowledge.

those that use them (see, for example, Gropius 1936, p.173).<sup>6</sup> Further, these texts are frequently employed within programs of architectural education specifically for the purpose of integrating knowledge of the user into design activities (Imrie 2003, p.54), such that, for many practitioners, their first contact with these texts is in facilitating knowing this *particular* object, the user.

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<sup>6</sup> Gropius (1936, p.173) notes that *Architects' Data's* "quintessence [lies] in the keeping of every building problem in relation to man and his natural dimensions".

# SUMMARY OF EXISTING LITERATURE AND CLARIFICATION OF KEY CONCEPTS AND METHODOLOGIES

In the preceding chapter I employed a series of key concepts in the course of formulating the core questions and areas of inquiry of this thesis. These, 'architecture', 'practice', and 'knowledge', require particular attention and clarification prior to the discussion and analysis in subsequent chapters, not least because each is (to varying extents) a contested or ambiguous site within both academic literature and common parlance, and a particular understanding of each is pertinent to the following analysis. This chapter addresses these concepts, with this clarification additionally providing the space to offer an overview of the sociological work (and work of other disciplines) that has been conducted in these key areas, thereby situating the positions I take in this particular study. Given this background, I present some further clarifications regarding research methodologies, relative to these key concepts and theoretical frames, along with indicating where in the thesis recounts of methods are given.

## 2.1 ARCHITECTURE

Amongst everyday uses of the term 'architecture' two distinguishable, though related, meanings can be identified;<sup>1</sup> 'architecture' can refer alternately to a certain kind of *artefact* or a certain kind of *activity*. In the first instance, 'architecture' denotes a particular type or corpus of buildings. Notably (usually) a limited range of the totality of structures within the built environment; "A bicycle shed is a building; Lincoln Cathedral is a piece of architecture" (Pevsner 1963, p. 15). Though contests over and attempts to shift this boundary are frequently made, such contests maintain the consensus that a boundary between architecture and 'mere building' is there to be discerned. Even attempts to dissolve it (e.g. Rudofsky 1987) reaffirm, in their polemical character, the conventionality of the conception of architecture as a delimited portion of the built environment.

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<sup>1</sup> This is to put aside completely the, somewhat metaphorical, uses of the term to refer to things such as the 'architecture of the computer software'.

Distinct from, though intertwined with, this conception of ‘architecture-as-artefact’ is that of ‘architecture-as-activity’; roughly and conventionally, that activity involved in the production of the aforementioned artefacts. Thus, ‘architecture-as-activity’ subsumes, in a sense, the understanding of architecture as artefact. In so far as architecture refers to this kind of activity, it (usually) more-or-less exclusively refers to the activity of a particular figure, ‘the architect’. Exactly what activities are considered architecture, or architectural, and who is an architect is, again, an old site of contestation, intertwined with those over the delimitation of artefacts. For now, this history is to be put aside. The aim of this brief clarification is simply to state that it is ‘architecture-as-activity’ that is the concern of this study.

This is an old corner of social life, and has not gone unnoticed by sociology. Though, comparatively speaking, is also not an intense focus of sociological inquiry. As a profession, architects’ work has caught the gaze of sociologists concerned with elucidating this branch of work and sociality. The first major sociological forays into architectural practice emerged from within the sociology of professions and of work and occupations. Blau’s (1984) significant monograph *Architects and Firms*, a large-scale study of New York-based offices, with a focus on determinants of firm success and failure and on latent contradictions amongst architects’ ideals, organisational structures, and the everyday realities of practice, was one such early foray. Reviews of her contribution in the early 1980s attested to the scarcity of interest and engagement with architectural practice as a valuable object of inquiry,<sup>2</sup> at least within the discipline of sociology (Adler 1986; Faulkner 1985; King 1986; Lang 1987; Sydie 1986). Further significant contributions (see, for example, Blau, La Gory & Pipkin 1983; Knox 1988; Larson 1993) adjoined earlier historical case studies of professionalization (Kaye 1960; Levy 1980) in defining architecture as a viable research topic. Architecture, *qua* profession, remains a fruitful area of research for those employing it as a vehicle to further an understanding of the professions in general, or viewing it primarily through frameworks of the sociology of professions.<sup>3</sup>

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<sup>2</sup> A status that hasn’t shifted dramatically, with contemporary comments still deeming architecture to be “relatively neglected” by sociology (Cohen et al. 2005), though “rapidly expanding” (Jones 2016, p.466).

<sup>3</sup> Case studies have explored common themes of professions and professionalisation via the peculiarities of architecture, including areas such as the place of professionals within class and power structures (Shadar, Orr & Maizel 2011), forms of firm ownership and organisational archetypes (Pinnington & Morris 2002), professionals understanding of work

However, architecture has piqued the interest of numerous sociologists that divert from a specific interest in professions *per se* and examine architecture through the prism of broader interests and theoretical projects. Examples include a critical engagement with the sociology of Pierre Bourdieu, notably in Stevens' (2002) account of distinction, Gartman's (2002, 2009) analysis of large scale cultural change, and Lipstadt's (2003) analysis of architectural competitions. This frame additionally informs Fowler & Wilson's (2004) account of architecture's gendered structure, and this concern is furthered by Sang, Dainty & Ison's (2014) research on the discursive reproductions of hegemonic masculinity. Further, realities of globalism and trans-nationalism have been explored through the case of the architectural professional, investigating the movement of people, knowledge, and practices (Faulconbridge 2010; McNeill 2009), the interaction of globally mobile architectural actors with inter/national regulation (Champy 2008; Faulconbridge 2009), and the constitution of transnational classes (Sklair 2005). Further, architecture is also taken up by Collins & Guillén (2012) as a site for articulating Collins' theory of interaction ritual chains.

This sociological gaze towards architecture has not been unreciprocated. The relation between the disciplines has, rather, been more of a dialogue, with architecture making concerted attempts to instrumentalise the knowledge of the social sciences. This attempt to draw sociology into architecture's professional activities may even outdate sociology's attempt to draw out accounts of the activities of the architectural profession. I raise this dynamic in order to identify the particular position of certain key scholars, whose significant contributions have emerged from contexts of close disciplinary interaction. Robert Gutman epitomizes such a position. His writing reflects being embedded within the world of architecture itself (as both consultant and educator), with his research on the profession (e.g. Gutman 1988) coloured by a strong advocacy for the utility of social sciences knowledge within architectural schools and offices.

Similarly, Cuff's (1992a) *Architecture: The Story of Practice* emerges from these disciplinary ties, though from the position of a scholar educated in architecture taking to a sociological mode of research and analysis. Cuff's (1992a) work (an ethnography of architectural firms) is important, in the context of this study, as a

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through particular discursive strategies (Cohen et al. 2005), and experiences and ascriptions of meaning to long work hours (Sturges 2013).

sizeable publication marking a turn in observation and analysis towards the regime of activities in which architectural labour is constituted. Such investigations, particularly attentive to the activities within the walls of offices, are of most importance to this study, both as being those nearest to the research focus and, thus, its immediate context within existing literature, while also providing material utilized in the analysis undertaken (see §2.4).

An important outcome of this literature has been the fuller and more complex picture of architectural labour constructed, moving beyond reductionist myths of ‘design’ that circulate in architectural discourse. It is to this picture that I contribute in this study. In part, this is to broaden the range of actors that figure in accounts of architecture. As Cuff (1992a) states, she seeks to ‘subjectify’ design, to position it as social construction. The position I take is that Cuff makes the right move in bringing more actors into the scene but, perhaps, is mistaken in an attempt to ‘subjectivise’<sup>4</sup> practice and not widen the list of agents further. Architectural projects incorporate a heterogeneous host of players, many of them not ‘subjects’.

A growing body of ethnographic work has apprehended the diversity of agents within architectural practice. In this regard, the work of Yaneva (2005, 2009a, 2009b) has been especially significant in the headway it has made via accounts of design that have articulated the place of various ‘non-humans’, such as models and ‘modelsopes’ (Yaneva 2005), within architecture. Identifying that “an architect has to be equipped with diverse tools— aids of imagination and instruments of thinking tied to the body—in order to carry out the simplest procedure” (Latour & Yaneva 2008, p.86) and, thus the multitude of entities embroiled in architecture, has, as in the case of this study, usefully oriented attempts to elucidate architectural labour (e.g. Comi & Whyte 2017; Ewenstein & Whyte 2007, 2009; Faulconbridge 2010; Fischer & Guy 2009; Houdart 2016; Iedema 2001; Imrie & Street 2011, 2014; Ivarsson 2010; Loukissas 2012; Lloyd Thomas & Amhoff 2015).

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<sup>4</sup> Rather, ‘espoused attempt’ may be a more accurate description, as the account Cuff gives certainly doesn’t altogether exile ‘objects’ entirely.

## 2.2 PRACTICE

In this thesis, I situate 'practice' as key to understanding knowing the user in architecture. This is not, however, to emphasise an interest in the portion of architecture indicated by this native use of the term in the world of architects.<sup>5</sup> Rather, it is to make explicit the importance, when examining social life, of an orientation towards 'practices'. This is to align this study with contemporary practice theory, or practice-based approaches, which share a common understanding of the phenomena encountered within the social world "as constellations of, aspects of, or rooted in practices" (Schatzki 2016, p. 29).

Practice theory precipitated in the efforts of a number of contemporary authors (Ortner 1984; Schatzki 1996; Schatzki, Cetina & Savigny 2001; Reckwitz 2002a), to coalesce a range of late twentieth century theorists (principally Pierre Bourdieu, Anthony Giddens, and, to an extent, the later work of Michel Foucault) and their Wittgensteinian and Heideggerian influences, on the basis of a common orientation towards 'practices' as fundamental to inquiry into sociality. The work of contemporary practice theorists has been to settle the fertile ground common to these earlier writers and develop and extend it into a fruitful programme of theory and empirical research based on the premise that practices are fundamental to any social object of inquiry and the basic entity from which 'the social' is constituted, in contrast to "individuals, (inter)actions, language, signifying systems, the life world, institutions/roles, structures, or systems" (Schatzki 2001, p. 12). The work of these contemporary authors (Hui, Schatzki & Shove 2017; Nicolini 2012; Reckwitz 2002a; Schatzki, Cetina & Savigny 2001; Shove, Pantzar & Watson 2012) has gone beyond and elaborated the original insights garnered from the 'practice turn', pursuing emergent questions and challenges and contributing to defining 'practice theory' as an identifiable and valuable mode of apprehending social phenomena. Though, the contributions remain as diverse in their interpretations of fundamental concepts and in their intellectual origins as earlier theorists. Even conceptions of 'practice' itself is a site for variation, often tailored to the intellectual task at hand. As Schatzki (2001, p.

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<sup>5</sup> A 'native', but distinct, use of the term 'practice' is present in the world of architects (and is occasionally employed in this manner during this thesis). Architectural offices or firms are frequently referred to as 'practices', it's not uncommon to hear the question as to whether one is working as an architect producing buildings (as opposed to, say, working as an academic, or studying) phrased as "Are you in practice?" or "Are you practicing", and innumerable books and conferences, meetings, and other gatherings are devoted to the questions and problems of architectural 'practice'. This is not the concern with practice taken up by this thesis, however.

11) made clear, and as Nicolini (2012) reiterated a decade later, there was and is “no unified practice approach”. This should not be mistaken for a fault. Rather, with the critical stance and cross-fertilization of ideas it engenders, it should be regarded as a positive characteristic of this body of work.

Though my intent here is not to fasten to one particular manner of apprehending practice,<sup>6</sup> Shove, Pantzar & Watson (2012) have developed an especially fruitful mode in so far as one’s research approach and topic is what Nicolini (2017) has labelled ‘genealogical’ (focused on the trajectories of particular practices and constellations of practices over time and space; how they emerge and change). I drew on this approach most extensively in the research reported here. Such a position requires vigilance in insuring that analytical moves undertaken, treating practices ‘as-entity’, do not slip into a reification of practices and forget the realities of ‘practice-as-performance’ (Shove, Pantzar & Watson 2012, pp.7–8; Nicolini 2017, p.29). This particular schema, incorporating ‘materials’, ‘meanings’, and ‘competencies’, is valuable as an analytical tool by virtue of its specificity, in providing a useful orientation to the componential reality of practices (regardless of what ‘categories’ they may fall under) and direction in the identification of such components, but, also, by virtue of its generality, as a toolkit of concepts that does not get bogged down in an a-priori attempt at a ‘conclusive’ or comprehensive schema of components. Most specifically, though practice and knowing are not identical, this approach also provides for a useful model for apprehending knowing (see introduction to chapter 4).

To take this ‘practice’ standpoint does not mean to frame architecture (whether apprehended at the scale of the congeries of activity within a particular project, within the spatial domain of offices, or in the broadest sense as a field of social life) as a practice but, rather, a practice-oriented approach positions architecture as a constellation of interconnected practices.<sup>7</sup> A concern with the

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<sup>6</sup> Pinning down a definition of practice, or attempting a comparative evaluation of various formulations, is beyond both the scope and concern of this study. Generally speaking, the approach taken has been to take on the multitude of ways in which practice has been defined using any and all as tools to orient and sensitise analysis, rather than systematically direct it or make attempts to justify a particular definition of practice via the work undertaken in the study. In this regard, it shares the position taken by Nicolini (2012), in his ‘toolkit’ approach, where he advocates that “much is to be gained if we learn to use these [practice-based] approaches in combination, rather than attempting a grand synthesis” (2012, p. 9).

<sup>7</sup> Distinguishing between a regime of activity that might be designated a ‘practice’ and that which might be otherwise designated a ‘practice bundle/complex/etc.’, and, indeed, between



'successes' of knowing in 'architecture' is, thus, to attend to the presence of the accomplishment of knowing in particular performances, to the presence of such performances in the complexes<sup>8</sup> of practices in which architectural labour transpires, and to their presence and dispersion in the broader totality of the constellation of such complexes.

Of the espoused advantages of the turn to practice in the social sciences,<sup>9</sup> two in particular are of most significance to this study. Firstly, it is the reformulation of an understanding of knowledge. This conception of knowledge will be addressed in the section below but, to comment briefly, is important in its move to understand knowledge as firmly rooted in performance and the flow of activity rather than being situated within a distinct realm of mental phenomena 'within the heads' of practitioners. Instead, knowing is understood as emergent in practice, incorporating and dispersed amongst the heterogeneous congeries of human bodies, actions, objects, and other entities there-in. In this is indicated the second affordance of practice theory relevant to this study, an attendance to the objects, artefacts, 'things', and material world in general, as a constitutive element of the social.

This move of according a place to the 'material' within the social world is by no means unique to practice theory. This common ground with actor-network theory (ANT), for instance, has engendered especially fruitful encounters. Like theories of practice, ANT, and science and technology studies (STS) more generally (see, for example, Pickering 1992, 1995), has shown a sensitivity towards practice and performance (though, without necessarily according it the same ontological priority).

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'smaller' actions of which practices are composed, is not necessarily clear. The more important point is, perhaps, to perceive this 'nested' picture of regimes of activities, themselves composed of interconnected activities, forming part of and resources for larger regimes of activity, rather than making attempts to pin down definite boundaries. Instead, such boundaries, such as when previously distinct practices become so intertwined that they are considered as a single practice-entity (Shove, Pantzar & Watson 2012, p.82), are a matter wrought in the ongoing performances of social life itself and it is to these (rather than those of the analyst) that it is most valuable to attend to.

<sup>8</sup> Practice-oriented approaches have offered numerous names for the greater entities formed in the joining together of practices, such as 'bundles', 'complexes', or 'arrangements', each articulating variations amongst the types of such congeries. In this thesis, architecture is conceived of as a *complex* of practices, in the sense of a relatively strong constellation of interdependent practices in contrast to a *bundle* of less cohered pattern of practices (Shove, Pantzar & Watson 2012, p.87).

<sup>9</sup> Those of note include dissolving the perennial problems of the relation between agency and structure and, in parallel, those of micro and macro social phenomena, the introduction of "new and different phenomena, objects of inquiry, questions and concerns" (Nicolini 2012, p.14), and an accordance with contemporary processual accounts of reality.

Given these congruities,<sup>10</sup> especially regarding the place of objects, artefacts, ‘things’, and the material in social life, numerous practice theorists have occupied a position on the border of practice theory and ANT, drawing on the valuable research and insights generated under the banner of each. It is this border zone that I most frequently utilize in this study.

This turn to materiality seeks to reconceptualise “things and artefacts as social entities that *play an active part* in the generation, stabilisation, and reproduction of social order and sociality” (Preda 1999, p.349, emphasis added). Objects (like ‘handbooks’) and the material world are not something alternately causing or caused by, shaping or shaped by, an otherwise distinct and separate ‘social’ world and social phenomena. They are, rather, a constitutive component of sociality, entities with which the social itself is composed (Latour 2000). In the case of practice theory, they are such as elements of practices; bodies, objects, artefacts, technologies, ‘nature’, and otherwise classified matter are vital and necessary components of the performances through which social life transpires (Reckwitz 2002b). This conception of the social life of objects has engendered invaluable attention to various diverse types of matter and its place in social life, while simultaneously unveiling and unpacking the enormous diversity with which ‘the material’ contributes to the playing out of sociality (for an overview, see Pels, Hetherington & Vandenberghe 2002) - ‘objects’ are no unitary or simple phenomena.

## 2.3 KNOWLEDGE

Perhaps more than the preceding sections, attempting a clarification of or to stake out a position vis-à-vis ‘knowledge’ is to open up a can of worms. My intention in doing so is not to become bogged down in a mire of epistemological speculation but, rather, to put forward a working image employable in this study. In this section I endeavour to present and advocate for a particular conception of knowledge, though it might be reasonable to contend that such a task is one for epistemology. In

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<sup>10</sup> ANT and theories of practice also sit within the family of social theories that subscribe to a ‘flat’ ontology, that is, one that sees the social world as playing out on a single ‘level’ (of practices in the case of practice theories, of associations in the case of ANT) as opposed to those which conceive of a social world made of more than one ‘level’ or ‘domain’ with systematic relations holding between them, typically of micro and macro or individual and system/structure divisions (Schatzki 2016). Nicolini (2012, p.169) even labels Latour a “reluctant practice theorist”.

response to this the position I take is that the focus of the research questions are such that a definiteness or, at least, lucidity regarding the conception of knowledge underpinning the research seems requisite. Though, additionally, that *if* knowledge is the kind of phenomenon presented here, this conception renders what knowledge *is* a topic for sociological investigation, 'empiricises' it in a sense.

Again, in this task it is the work of theorists of practice, and the insights made into the character of knowledge and its place in sociality, that I draw upon most frequently. This work elaborates on earlier formulations regarding the distinction between, to employ the Rylean (1963) frame, 'knowing-how' and 'knowing-that' and the priority of 'know-how'.<sup>11</sup> In this, an image of human beings as some apparatus driven about by a stream of propositional cognitive goings-on is dispelled and replaced by a picture of subjects as primarily skilled bodies who, as Polanyi says, "can know more than [they] can tell" (2009, p. 4).

The attentiveness directed towards, and elaboration of, this phenomenon of 'know-how' (derived from a diverse origins, including Wittgenstein 1973; Heidegger 2008; Merleau-Ponty 2002; and Polanyi 2009) and its primacy in regards to social action and to 'explicit', 'propositional', or 'knowledge-that', has been a formative position and ongoing focus of investigation for practice-oriented approaches. This practical, embodied form of knowledge in action has been crucial to conceptions that see it as a core pillar of practice.

The position I take in this study is sympathetic to the general account of knowledge proposed by Hetherington (2011), and also Hyman (1999), who take this form of knowledge variously termed 'know-how', 'tacit', 'embodied', or 'practical'

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<sup>11</sup> Ryle, endeavouring to construct an account of intelligent action (and of mind in general), argued for the primacy of what he termed 'knowing-how', over a propositional form of knowledge, 'knowing-that', that had been privileged by the 'intellectualist' epistemological tradition. According to this intellectualist tradition, "To do something thinking what one is doing is... always to do two things; namely, to consider certain appropriate propositions, or prescriptions, and to put into practice what these propositions or prescriptions enjoin. It is to do a bit of theory and then to do a bit of practice." (Ryle 1963, p. 30). However, as Ryle makes clear, this would lead to an infinite regress; one must have the appropriate know-how to apply maxims or employ propositions, for example knowing what propositions or maxims are appropriate to a particular situation, and, if this knowledge is propositional, the same condition applies, thus the regress. Hence, Ryle argues that it is our know-how, our skills (that operate unhindered by some secondary proposition or 'mental' governance), that fundamentally underlie any intelligent action, and this form of knowledge is an ability to do things, a capacity, or a disposition (though, not in the sense of a 'single-track' disposition like a habit but, rather, a disposition that manifests in a heterogeneous corpus of actions).

knowledge to be indicative of the character of *all* knowledge; that is, to conceive of all knowledge as *ability*. This conception takes 'knowledge-that', or propositional knowledge, to be, fundamentally, a kind of 'knowledge-how'; "all propositional knowledge is practical knowledge; which is to say, knowledge how to *do* this or that" (Hetherington 2011, p.xi). While acknowledging the correct apprehension made by Ryle in identifying the primacy of 'know-how', this effectively dissolves the lingering distinction between 'know-how/know-that' (where-by each is seen to be fundamentally distinct, generating, for example, questions about which founds the other) by proposing that all knowledge is knowledge-*how*,<sup>12</sup> an ability. Knowledge is not representation, information, or belief or some other state or content of a mental domain; knowledge is something that is *done*.

Hetherington (2011) labels his account of knowledge 'practicalist'. However, notably absent from this account is practice itself. The character and complexities of practice, the manifold of orchestrated entities and actions through which knowledge transpires, is, comparatively speaking, somewhat slighted (though by the nature of disciplinary boundaries and conventions, not the author). In this regard, the work of practice-oriented theorists (e.g. Gherardi & Nicolini 2000; Nicolini 2011; Orlikowski 2002, 2006) that have taken knowing to be "an ongoing accomplishment, constituted and reconstituted in everyday practice" (Orlikowski 2002, p.252) nicely complements Hetherington's core intuitions, greatly extending and elaborating it with thicker descriptions of the nature of the practices in which knowledge-as-ability is to be found.<sup>13</sup> Though it is not the role of the social researcher to stake out a general account of knowledge or become immersed in epistemology (as the branch of philosophy), in so far as their concerned is with tracing knowledge through social life

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<sup>12</sup> This also being in contrast to those, such as Stanley & Williamson (2001), that have sought to dissolve the Rylean distinction but by subsuming 'know-how' as a form of 'know-that'.

<sup>13</sup> Whether or not this account of knowledge-as-ability would find broad acceptance amongst practice-oriented theorists, as a general account of all knowledge, is contestable. A dichotomy of 'know-how', tacit, embodied, and practical knowledge on the one hand and 'knowledge-that', explicit, propositional, and discursive knowledge on the other is frequently reproduced in practice-oriented accounts of social life, but whether these are regarded as fundamentally different by the authors investigating or utilizing these notions is unclear and their use is, like most areas of 'practice theory', far from uniform. For the most part, it would seem that this is simply a case of it not falling within the interest or practical concerns of practice-oriented social researchers to go about staking out explicit positions on a general account of knowledge (at least, in the philosophical mode suggested). Certainly, when authors such as Nicolini (2011) assert knowledge and practice to be ontologically equivalent it appears that such a position would be entirely congruous with the picture of knowledge-as-ability, such as that outlined by Hetherington (2011). Regardless, this, at least, empirical and analytical focus provides a point of commensurability for a useful dialogue.

an account of knowledge-as-ability usefully attunes the researcher to the fact that *what* is to be traced are abilities, capacities, competencies, action and the means through which these occur and travel.

However, in addition to this value in orientation, if one takes knowledge as ability this effectively renders the question of what knowledge *is* an empirical concern. Why this is so is bound to where such a conception locates knowing or the knowing agent: distributed amongst a heterogeneous host of elements orchestrated in practice. Such a position is grounded in a larger picture of agency offered by both practice-oriented accounts and branches of STS, especially ANT. This understanding of agency is attuned to its ever dispersed and distributed character, amongst both elements that might conventionally be labeled 'human' and 'non-human'. As in Pickering's (1993) account of the emergence of human and material agency in the 'mangle' of practice, Callon & Law's (1995) account of the '*hybrid collectif*', Michael's (2000) 'co(a)gents', and the prominent view in practice theoretical approaches that "agency is an attribute of heterogeneous arrangements" (Nicolini 2012, p.178), such pictures effectively displace notions that social agency might be simply located within singular loci of action and discrete autonomous, human, agents. It also, importantly, grounds a methodological position advocated by Latour (2005) where-in, in negotiating complex distributions and attributions of agency, one ought to abstain from bringing pre-determined agential sources to bear on any particular event. If one conceives of knowing in terms of ability and action then this picture of agency is of obvious relevance. It opens the possibility for replacing traditional conceptions of the knowing agent as autonomous subject (specifically, in the operations of an 'internal' mental world) with what Hetherington (2012) has called the 'extended knower', a heterogeneous host of human and non-human components orchestrated in accomplishing knowing action.

Hetherington (2012, p.231) offers the case of knowing the temperature of a room; here "[t]he *person-by-using-the-thermometer* knows; the *person-plus-the-thermometer* knows. That *unity* knows; it is the agent of the knowing". That is, it is in the unity of person and thermometer in practice that the ability resides to, for instance, give accurate reports on the temperature of the room, or perhaps turn the heater down at the appropriate time. Knowing is, as action generally, distributed and dispersed; it is a process located in assemblages of 'humans' and 'non-humans'. Furthermore, such 'knowing assemblages' extend beyond immediate scenes of action to the larger spatio-temporal network of entities and practices that are

otherwise mediated and translated into the particular scene of action; knowing is more properly located in nexuses of interconnected practices (Nicolini 2011).

In this regard this conception of knowledge-as-ability there-by renders questions of knowing, and what knowing is, to be a fundamentally sociological question, in the sense of a question of association (Latour 2005), of the manner of composition of such knowing assemblages. If it is the case that “[k]nowledge, morality, craft, force, sociability are not properties of humans but of humans *accompanied by* their retinue of delegated characters” (Latour 1988, p.310) this then opens up a host of new entities, with new kinds of roles and doing new kinds of things, to the analytical frame when investigating knowing.

In the context of this introduction to ‘knowing assemblages’, it is important to emphasize that this ability or capacity of knowing should not be regarded as static attribute of an entity (such ‘assemblages’), but as “an accomplishment repeatedly produced in and through social practices” (Nicolini 2011, p.605). To foreground this processual character, I employ the term ‘knowing’ (rather than ‘knowledge’) most frequently. For the same reason, the term ‘knowing assemblage’ is often used over, say, ‘extended knower’ (though, admittedly, the supposedly more processual connotations of the former are slight), foregrounding the verbal character of ‘assemblage’ rather than possible connotations of a static edifice.

Two further inferences are worthwhile drawing out here. Firstly, it is important to note the possibility for comparable though compositionally distinct instances of knowing. For example, someone making their way to a destination with map in hand compared to someone otherwise unaided. In the first instance one might be hesitant to ascribe ‘knowing the route’ to the walker, but, nevertheless, it would be more difficult to contest the proposition that in both cases ‘knowing the route’ has occurred. Importantly, the disparity in the composition of these two cases is not simply the addition of artefact (map) and subtraction of capacity on the part of the walker; the addition of the artefact is also an addition of competencies (i.e. the know-how involved in map reading, looking down to check the map at appropriate times, and so on) to the totality of elements orchestrated in practice. Secondly, and related to this, is the general diversity in the composition of knowing, both in kinds of elements and of their association. In other words, to espouse this ‘unitary’ view of knowledge (*all* as-ability) is not to reduce it, attempting to eliminate the distinctions perceived in its operation absolutely; rather, the opposite is the case. To re-frame knowledge in this manner is to open it up to greater diversity, acknowledging that not only does

knowledge come in forms that have an apparent weighting towards discursive action (what has been labelled 'propositional') or towards that of bodily, unconscious action, and all the gradients and variants otherwise identified by epistemologists or social scientists, but also that the entities of which knowing is composed and the subtleties of composition are as immensely varied. Knowing is no homogeneous phenomenon. Transpiring as it does through diverse assemblages of entities, human and nonhuman, in practice, and able to be constituted through innumerable variations of innumerable entities, knowing should be, rather, conceived as an incredibly varied performance.

Finally, given this particular conception of knowledge-as-ability and the focus of this thesis, a further question presents itself regarding what it is to have, or for there to be present in action, knowing *of* something or other (i.e. *of* the user). If knowledge is an ability or capacity it is expressed, manifested, made present in the world through action, that is, in *doing*. Though, more specifically, knowledge is an 'adverbial ability' (Hyman 1999); "knowledge is not the ability to do such and such things: it is the ability to do things \_\_\_\_\_ly" (Hyman 1999, p. 440). This \_\_\_\_\_ly manner is to do things such that a particular state of affairs, object, or matter of fact is the reason for action.<sup>14</sup> In other words, what knowing is *of* is what is made effective in action. To know something is to make it the cause of (though, avoiding connotations of simple one-track cause-effect) or to make it the reason for (though, avoiding connotations of intellectualism) the rather heterogeneous, indefinite, and indeterminate array of actions that may possibly manifest knowing. Here, my intention is to indicate that knowing is a matter of agency, of extending the manner in which an object acts and produces effect via the intertwining of the agency of the knower and the known, emergent in practice. When knowing occurs in action, the known acts, exerts influence, through (or with) the knower. The point that I am pursuing here is that to investigate knowing of some thing or other is to trace the manner in which the agency of some state of affairs, some object (such as the user), is transformed, translated, or extended so as to be a source of effect in action (such as in architectural practice).

Having sketched this picture of knowing, the pertinent task is not to determine the limits of extension of such 'extended knowers' or 'knowing assemblages' but,

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<sup>14</sup> This formulation here diverges from, through draws on, Hyman, who otherwise would limit to 'facts' as the reason of action.

rather, to take this reality of extension, distributed-ness, and, importantly, variation in the composition of comparable assemblages as points of departure. To return to the initial formulation of the research questions, in the light of this preceding discussion on architecture, practice, and knowing, to ask how, in the particular case in which the handbook is involved, knowledge of the user is constituted in architectural practice is to inquire into the manner in which this complex of practices called architecture is so configured that compositions of elements in knowing assemblages are built. It is to inquire into what the elements of such compositions are, the associations wrought between them, their specificity and their historicity. Further, given the variety inherent within the nature of composing knowing, it is to ask how the particular context of practice bears on the kinds and character of knowing there-by constituted.

## **2.4 METHODOLOGICAL CLARIFICATIONS**

When it comes to apprehending this particular object, the 'handbook', the salient matter is, to state the obvious, that books say things. Thus, expectedly, their discursive material was a core focus of the analysis I undertook in the research reported here. Though, this was undertaken on the premise that to say something is to *do* something, or, further, that it involves a triad of saying, doing, and being (Gee 2011) and is to be entangled in practice.

Texts are not an unfamiliar ally to social research. These may be texts generated by the acts of researchers themselves, such as interviews (either as vocal utterances and recordings, or transformed into transcriptions) or carefully crafted, completed, and returned questionnaires. They may also pre-exist the researcher's project, such as census statistics, cola advertisements, personal diaries, or a previous researchers' data and reports. Regardless of their source, such texts are frequently enlisted as material ('content') to be analysed so as to provide access to some otherwise absent, practically or inherently inaccessible, or not directly observable phenomenon (Krippendorf 2004, p.260) such as public opinion, consumer habits, the prevalence of particular values and conceptions of reality, or the operations of class structure. In whatever case, texts are often employed because of the manner in which they are seen to reflect, infer, or be representations of some phenomena of interest. They are valued for the access they give to these phenomena, and the researcher is concerned to, through properly enlisted modes of production or collection and techniques of analysis, ensure that the representation



and the inferences and interpretation drawn from them provide for an accurate picture of the social world. This manner of apprehending texts (though, not at all to imply it is invalid or lacking in value) is not the approach I primarily take here.

Such an orientation is to consider texts as a 'resource' within social inquiry. Instead, this study means to apprehend texts first and foremost as 'topic' (Prior 2003), to see them less as a projection screen and more as a component part of a machine.<sup>15</sup> In so far as a text does representation, this study is primarily concerned not with that which is represented and the access given to it, but instead in the *doing* of the representation, the *representing*. What a text is doing, and what is done with it, is the analytical focus of this study. It is not the world beyond (but supposedly revealed within) the text that is of interest, but the world of the text itself, of which it is a constitutive part. This, of course, entails also employing texts in their capacity to provide representations of or access to some phenomenon or other (it is hard to think of any research which wouldn't), but it is not what primarily drives the engagement with 'handbooks'.

Employing texts as 'resource' is usually accompanied by attempts to instrumentalise them within a particular methodology, as a component of a particular means to access the investigated phenomenon. On the other hand, taking texts as 'topic' suggests and opens space for considering the appropriateness of using a multiplicity of methods in adequately apprehending the text at hand. This is the empirical orientation taken here; I employed a toolkit of methods to analyze the architectural handbook and construct an account of its place in the constitution of knowing within architectural practice.

Broadly, the textual analysis undertaken within this research project can be divided into two primary modes and separate processes of analysis. Firstly, what would most appropriately be labelled content analysis and, secondly, that for which

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<sup>15</sup> Orientations in social research frequently conceive of textual material as a kind of projection screen, onto which the shadows of some otherwise unobservable social entity are projected. The implication being that if one knows the manner of projection (and, perhaps, is aware of the occasional distortions provided by the screen), one may infer the nature of the projected phenomena from their shadowy semblances. In contrast to this stance, the conception of texts adopted in this study is more akin to seeing them as a component of a machine or fragment of an artefact to be reconstructed. In one case, the researcher is concerned with the operations of some absent phenomena and the manner in which they operate *through* the texts at hand, in the other the concern is, instead, with the operations *of* the text or the operations of which it is a part.

the term discourse analysis would be most appropriate.<sup>16</sup> These two methods were directed towards two aspects of this knowing assemblage wrought about the handbook. Content analysis was employed primarily towards examining the dimension of mobility, while discourse analysis was the means predominantly employed in exploring those meanings ascribed to the use of the handbook within broader structures of significance. Given that the methodological procedures employed within this project were various, the most efficient means of describing the detail of the processes undertaken is separately, and this is done so in sections 4.2, 4.6, and 5.1.

Thus, this brief section on methodologies is not to describe at length the textual analysis tasks I undertook. Though these were the core research activity, an otherwise salient component remains to be addressed regarding the place of participant observation, ethnographic, or otherwise observation-based data collection. That is, given the underpinnings of theories of practice which place the observation of sites of action in-situ as predominant means for any examination of practices (Nicolini 2017), the position taken that knowing is best understood as ability or capacity for action, and the employment of text 'as-topic' with accompanying assumptions of its status as a constitutive element of and agent within social action, there would seem to be an imperative for a mode of research that is grounded in the observation, 'in-situ', of the knowing action involving the architectural handbook.

Thus, that participant observation, or similar data collection activities, within architectural offices and amongst the practices of architects and the use of handbooks did not form part of this research project needs to be addressed. Firstly, on predominantly pragmatic terms, the timescale of the research project limited my opportunity to undertake productive observation-based research.<sup>17</sup> This is not to say that, simply, within the time available such research activity could not have been undertaken. Rather, the limiting factor was the potential for novel knowledge to be produced given my existing status as a novice practitioner in architecture. That is, with the time and resources available, I determined that the number of sites that may be accessed, the length of time for which they could be accessed, and the kinds of

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<sup>16</sup> Though, see, for example, (Prior 2008) on the blurred distinction between 'content analysis' and 'discourse analysis'.

<sup>17</sup> The research was undertaken as part of a twelve to twenty-four month candidature for the degree of Master of Arts (Research).

activity (in both observation and participation) would not be sufficiently distinct relative to my extant activities in the world of architectural practice to be productive.

Secondly, it is important to emphasize that such data is not absent from the accounts offered here. As outlined above (see §2.1), a growing body of literature has developed with accounts of architectural practice grounded in ethnographic, participant observation, or other observation-based methods of data collection. Thus, though my own experiences and observations do not figure directly in the accounts of architectural practice offered in this thesis, they are nevertheless employed in directing the collation, synthesis, and interpretation of this data otherwise reported in existing literature.

Thirdly, the significance of the observation of practice in-situ for practice-oriented approaches is not to entirely exclude the tenability of other modes of researching practice. Though with their own hazards, modes of researching practice that are oriented towards the 'dynamics' (Shove, Pantzar & Watson 2012) of practice or those that are focused on the manner in which practices form connections and larger congeries, what Nicolini (2017, pp.28–30) labels the 'genealogical' and 'configurational' orientations respectively, remain valid avenues for apprehending practices and the social phenomena constituted there-in. These orientations to the dynamics of practice and the configurations of complexes, constellations, bundles, and otherwise named aggregations of practices are the primary orientations of this thesis. Additionally, this research was undertaken to explore the possibilities and limits for a project grounded in the analysis of textual and historical material informed by theories of practice, especially in so far as such a project relates to the practices of architectural history and theory and the potential import of such a mode into these disciplines.

Finally, the omission of observation-based data collection in this research project needs to be framed in the context of the wider intent of the research activities that were undertaken. Though done with the intent of providing, in itself, an account of architectural practice, the textual and historical analysis was also guided by my overarching intent of establishing direction and identifying valuable sites for future research with a larger scope and centred on the observation of the practices of architecture in-situ. In tandem with this, my intent was also to evaluate the usefulness of the research methods employed for this task of providing direction and indicating fruitful spaces for further research.

## THE 'USER'

When sitting in on a meeting where a project is being discussed it quickly becomes apparent that architecture is, in large part, the jostling of a host of numerous and diverse agents seeking to define their relevance, or the relative strength of their voice, in the context of the project at hand and ensure their translation into built form. Exposure to such a scene quickly dispels the myth that the architect is the lone progenitor of the work of architecture, and sociological accounts of this process have worked to this effect through their descriptions of the host of people (Cuff 1992a) but, also, those 'non-humans' (e.g. Yaneva 2009b) found shaping buildings.

These agents include not just those present around the table itself but also those absent but otherwise mediated (perhaps by spokespersons, or by documents or some other material means). Examples might include legislators, clients, shareholders, a loaning bank, the market and its state, fibre-cement and its durability, and, indeed, the 'user'. One such form of mediation (or, seen otherwise, type of thing mediated) is what is called 'knowing' (or 'objects of knowledge'), figured at the scene in 'knowers'. The significance of making this statement is to cast this action, knowing, and these objects mediated by it amongst this scene of a host of other agents (otherwise present or variously mediated) working to shape architecture and with which, in a sense, it must contend.

This goes on in any project,<sup>18</sup> and the range of agents can be a rather heterogeneous bunch. Just who makes this cast that bear on the project, is defined as legitimate in their influence, and how, to what extent, and towards what they may exert this influence, is the result of the ongoing negotiations of the project and is as numerous as there are projects. The strength of agents, or some, to define which other voices are heard, also varies (and the particular strength of the architect is no little matter in this regard). Furthermore, as the practices of architectural production

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<sup>18</sup> Even when the architect works relatively 'alone', a multitude of actors still jostle for position in her drawings. There are those objects of which we would usually say she 'has knowledge of'. In their invocation in a project she draws upon the resources of stable definitions of significance and relevance, in which durable and mobile texts (such as those of canonical works of 'theory') play an important role.

change over time so too does that which might potentially be determined by this host of agencies alter.<sup>19</sup> No voice is necessarily present or a given in the production of a building, or the definition of 'architecture', and its presence is always the manifestation of concerted *work*.<sup>20</sup> It is in this context that the history of the user, as an 'object of knowledge' in architectural practice, must be understood.

This chapter will explore some of the moments in the history of this object. My intent, however, is not to give a complete or even abridged history of the user; others have worked to stake out some of the contours of this history (e.g. Cupers 2013; Ellis & Cuff 1989; Forty 2004a; Hill 2003) and their efforts will certainly be drawn upon in the account to follow. Rather, the purpose here is to further elucidate just what, in the context of this thesis, the user *is*. That is, to specify more precisely what is meant by 'the user' (i.e. what its particular characteristics are) but, also, what *kind of thing* is denoted by this term and, thus, to what this research is focused.

As the sociological literature on the shaping and constitution of users in other areas of design and technology has shown, just what *kind of thing* the 'user' is is no simple matter (Oudshoorn & Pinch 2005; Wilkie 2010); their existence is materially and compositionally diverse and spans across spectrums of 'conception' and 'consumption'. In specifying, here, what kind of thing the user is my intention is to not to definitely lay down just what kind of thing the user is *in general*, but, simply, to indicate the phenomenon of interest. Put succinctly, by 'the user' the type of thing that is meant is an 'object of knowledge'. One might be tempted to say 'object of discourse' (as, indeed, its discursive reality is salient) but this belies the fact that this thing's constitution is beyond merely discursive enactment. This chapter will begin to unpack what an object of knowledge is in architectural practice, some of its salient characteristics, and its significance.

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<sup>19</sup> For example, architects have not always produced precisely or extensively dimensioned drawings. As these practices and artefacts develop they, consequently, open up a 'space' within architectural production where-in those agencies that determine the shape of buildings may exercise influence on, say, the exact dimensions of a particular element that might, otherwise, have gone un- or underdetermined by the design process.

<sup>20</sup> Consider, for instance, (Cuff 1992a, p.92) remark that "in the design process participants can admit any issue for debate, can consider an issue at any level, and can turn any constraint into a design variable".

### 3.1 THE TERMINOLOGY OF THE 'USER'

It is worthwhile briefly clarifying my employment of this particular term, the 'user', in this thesis. As might already be evident, it is employed to denote an object that is similarly denoted by a host of other terms including, for example, the 'occupant', 'inhabitant', 'human beings', or simply 'people'. This object being, roughly, those who use, occupy, inhabit, or otherwise go about populating, being in, and interacting with works of architecture and artefacts of the built environment, and figure in the process of architectural production as such. From this fairly simply proposition there are two implicit concerns that need to be addressed. Firstly, why is it justified to collate the aforementioned terms (and others) as denoting the same object, as sharing the same discursive space, as roughly equivalent, and so on? Secondly, why, of this host of terms, is this particular term, the 'user', employed?

This first question is of particular pertinence given that a key facet of what the user *is* resides in the process of 'collating' (elaborated below). Thus, the aggregating of such terms is significant in as much as it (the act of analysis) is engaging in the same process that constitutes what the user *is*. Consequently, it is important that these associations are not *solely* an artefact of analysis. Their justification is grounded in the fact that they are wrought within the field of practice of architecture itself. That these terms 'share ground', or that a single object underlies them, is, obviously, evident when they are used interchangeably, but also clearly in the contentions that arise and arguments that are made for the use of one over another (e.g. Hertzberger 2005, p.28; Lefebvre 1991, p.386). Though, this is not to render these terms identical; the variations amongst them are significant. However, it is to identify that, despite their divergences, the common ground they share and the strength of associations between them is part of the constitution of the object that, in this thesis, is labelled the 'user'.

The aforementioned contestations over terminology usefully preface the question of why, in this thesis, I employ 'user' over, say, 'inhabitant' or 'people'. This is not done on the basis of any leanings towards or favouring of the particular rendering of this object engendered by the connotations of the 'user'. It was simply that 'user' was deemed to be the term most peculiar to the field of architecture and, thus, useful in foregrounding that it is this particular object, as it resides in the world of architectural practice, that is the topic throughout the thesis.

### 3.2 'OBJECTS OF KNOWLEDGE'

The outline of an 'object of knowledge' I give here is, expectedly, bound to the conception of knowledge given in the previous chapter. Generally, two entities are drawn out in the ascriptions made to 'knowing' action. This dyad is the 'knower' (frequently figured as a human subject) and the 'known' (Law 2000, p.349). This is to say, in such acts two portions of the knowing assemblage in which this action is composed are figured and ascribed a kind of agency. There is that which *does* the knowing and that which is the reason, cause, or source of the effect that is this action. The point to be made here is that, despite the figurations made, the 'known', the 'object of knowledge', resides, as the 'knower' does, and is constituted within the totality that is the knowing assemblage. Understanding their constitution is, thus, to examine the composition of such knowing assemblages.

I have depicted the architectural project as a jostling of agencies, but this same process also plays out over an extended historical timescale. Here, objects of knowledge may progressively establish their position as an agent in architectural production as successful performances aggregate and ossify over time. Regarding this, the written text has particular significance. It stabilizes and ossifies such practices of negotiation in durable artefacts that transcend *particular* projects and define architecture and the process of design, and the actors that have a voice within it, *in general*. The process that goes on longer term in books, defining actors, their relevance, and their connections, mirrors that which goes on at the smaller scale around drawings and at meeting tables. The "habit" of the architect to write and discourse on their work (Briggs 1927, p.14) is, thus, not-insignificant.

Such objects may, once defined<sup>21</sup> as legitimate (and, perhaps, valuable or important) in architecture, become sites of particular intensity. Once present in the world of architectural practices, numerous enactments of such objects work to (re)define them, build upon them, and extend them. That objects of knowledge have no definite 'bounds' becomes evident in such instances. Rather, these objects are somewhat amorphous things, becoming multiple and variously articulated as sites of

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<sup>21</sup> It is important to note that the manner of such definition may be discursive, as in the case of the importance of textual artefacts for rendering such corpuses of legitimate agents in architectural production, but also in the dispersion of modes of practice by primarily non-discursive means.

contestation and innovation spring up in attempts to bring this object to bear on the production of architecture.

Examples of such 'objects of knowledge' include beauty, the market, the zeitgeist or modernity, war, the genius loci, or harmony. Though, this amorphous and evolving character is notably evident in one of architecture's most significant 'objects of knowledge', 'antiquity'. Once the ruins of ancient Rome were 'rediscovered' they became, like a wellspring or a seam to be mined, a flurry of activity. This is well encapsulated in the activities of figures like Brunelleschi, who travelled frequently and far to encounter the Roman monuments. Brunelleschi, and others like him, worked with "wild enthusiasm" (Briggs 1927, p.144) in an effort to bring this object to bear on their architecture. Importantly, however, they did not simply travel to the ruins of Rome and 'imbibe' them, acquiring a capacity to render them effectual in their practice or leaving with novel knowledge now sitting within their heads. Most significantly, they made drawings; they translated these artefacts into radically more mobile inscriptions, and this object and knowing was folded into a *complicated* (Strum & Latour 1987) assemblage of human and non-human. Crucially, this translation, and ensuing construction of a knowing assemblage, was a transformation of these monuments into the world of graphic inscription *already built* within the world of architects.

Such compositions joined with other definitions of 'antiquity', such as those found in the hallowed texts of Vitruvius, to constitute a diverse and changing object at the centre of the new architecture *all'antica*. Enactments of this object and continued attempts at its (re)definition served to generate novel problems, such as the proper proportioning of certain elements, that further fuelled architectural practice. Later efforts, notably aided by the printed book (Carpo 2001), went about redefining this object in the form of the systematized 'orders'. Such was the significance of this particular articulation that they became less a component of this object 'antiquity' and, in a sense, took on a separate existence. Events in the centuries to follow, such as the rediscovery of the ruins of ancient Greece, and the products of the travels of the 'antiquarians', folded into the extant assemblage of 'antiquity' and served to continue its fluidity.

Here, my intention is to foreground the picture of the changing indefiniteness of such objects. That is, not only is the host of agents that are to be found entangled in the architectural project a site of constant negotiation and redefinition, but the identities of these characters are themselves also fluid, frequently multiple, and sites



of contestation (on this 'messy' character of objects, see Law & Singleton 2005). Having given a more general description of what kind of thing the user is, the remainder of this chapter will turn to specific moments in the history of this object to further elaborate this picture.

### 3.3 ASSEMBLING THE 'USER'

As indicated in the discussion of terminology above, objects like the user do not come into being from nothing, 'discovered' or created, fully formed, as utter novelty. Rather, it is more appropriate to see this object, in any relatively coherent, unitary, or substantially effectual form, as a novel assembling of extant entities. Its history can be viewed as processes of aggregation and consolidation, establishing and furthering the agency of this object. One can, thus, also look to instances of what could be called 'proto-users', those elements from which the object of knowledge (or, the knowing assemblage in which it is constituted) is derived or composed. Thus, despite, as Cupers (2013, p.2) correctly identifies, being a predominantly twentieth-century phenomenon, and the term 'user' itself being comparatively unknown before 1950 (Forty 2004b, p.312), it is not *entirely* absent from the horizons of architecture prior to this.

With the frame of the user at hand, one might be tempted to see, for example, references to 'bodies' scattered through Vitruvius' (2009) ten books, or perhaps, as in Ledoux's *'architecture parlante'*, the recurrent concern with the appropriate architectural expression of the character of inhabitants, as iterations of this object. However, it is perhaps better to see them as, rather, 'proto-users', absent of "a discursive space in which otherwise disconnected practices... are drawn together" (Shove, Pantzar & Watson 2012, p.111). They lack the extension and intensity of the agency established in the coalescence of the particular figuration of the 'user', though, indeed, these, and similar cases, are elements drawn into this figuration following its emergence.

An especially noteworthy 'proto-user' is, again, found within Vitruvius' (2009) books, as a component of what has come to be known as the 'Vitruvian triad'. This schema posits three principles that define the work of architecture. Accompanying *venustas*, and *firmitas* is *utilitas*, that is, utility, or usefulness. 'Use' is of particular significance as an especially old and firmly embedded 'proto-user', but also in the manner in which it is translated. Vitruvius' antique treatise became a founding

document of the renaissance, and this triad was reproduced in various forms (from slight variations on the triad, to sets of many principles derived but fairly distinct from Vitruvius') in the numerous translations and derivations of this text in the following centuries some even placing utility in a position of primacy, as a greater fundament (as in the French 'usage'; see Krufft 1994, p.144).

The demand that buildings should be designed according to 'use' doesn't necessarily imply the presence of the user. Rather 'use' in itself, that is, the activities or 'function' of a space can be apprehended independently of rendering the user as an object of knowledge. Architects are more than happy to speak of and deal with what Ellis & Cuff (1989, p.8) call "disembodied actions", activities that "float free" of any apparent articulation of those acting.

However, the obvious commensurability of use with the user provided the ground for the user to take up a position of firmly established legitimacy as an agent within architectural projects. This translation was particularly significant in so far as the comparatively obscure and parochial object of 'use' was replaced by an object that afforded a greater accordance with extant objects of the emerging human sciences. This can be interpreted in the context of the not-insignificant symbolic capital of scientific endeavour and the familiar imperative for disciplines to assume a scientific garb.

This was, indeed, how this translation was instrumentalised in practice. An architectural practice's orientation to those that 'peopled' buildings served to, in the early twentieth century, aid the architect's attempt to recast their identity as one of 'social expert' and, thus, especially adept at dealing with the task of mass housing (Kuchenbuch 2016a). Likewise, the formation of environment-behaviour studies in the 1960s and its alliance with architecture, in tandem with the growing disciplinary status of the social sciences in America, provided ground for architects to make a grab for the mantel of 'scientific' expertise (Sachs 2013). Related to the place of the user in enacting the architect's identity as 'social expert' was the emergence of a specific architectural practitioner type after World War II for whom, in contrast to the practitioner types of 'the artist' and 'the professional', the user was their core concern (Blau 1984, p.9). Given architecture's status as 'knowledge-based' profession, it is part of the significance of knowing that they work to manifest this knowing in their practice (Alvesson 2001), and every novel object of knowledge, however minor, is the re-definition of the profession and, thus, existentially pertinent for the practitioner.

That modernists “waxed eloquent” (Kostof 1989) about building inhabitants and progressively aligned themselves with the human sciences should not be misapprehended as a simple movement of knowledge from centres of ‘knowledge production’ to architectural practice. Though they may appropriate terminology and objects, it would be inaccurate to assume that the assertions architects make and the users otherwise enacted in practice are grounded in or derived from an appropriated ‘scientific’ domain. In the years of early modernism, for example, despite functionalist doctrines and the central position of ‘man’ or the ‘user’ in modernist rhetoric (e.g. CIAM 1970), the work of these architects was, as Riemer (1941, p.865) noted, “most often based on intuition or vague speculations about the living habits of those social groups which are to be accommodated” rather than, for instance, being informed by sociological accounts of social reality. In more contemporary contexts, (Cuff 1992a, p.85) has noted that when it comes to assertions like “the social grouping in a dorm should not exceed 20 people” the foundations are uncertain. Blau (1984, p.85) similarly identifies that, regardless of apparent ‘social awareness’, the contradiction between a strong belief in ‘architectural determinism’ (that buildings directly determine the values, needs, and preferences of inhabitants) and the attempt to have those same user values, needs, and preferences direct architecture suggests architects lack of receptiveness to social research findings.

The user also transformed into something novel as the architect became both “socially and administratively” distanced from the eventual inhabitants of their buildings by the requirements of the production of prevalent building types (principally mass housing) following WWI and WWII (Lipman 1969, p.197). Such buildings were no longer for the clients commissioning them and who might traditionally occupy an otherwise contending identity of ‘client-user’ and, thus, directly object to the architect’s attempts at ‘knowing the user’. This notion of the absence of an objecting user is important; what may be an apparent need to ‘replace’ a user now absent from the meeting table with a knowing assemblage in which the ‘user’ is constituted as an object of knowledge is, equally, an opportunity for architects to take up a novel space for action as spokesperson. However, relying on intuition and reflecting on their own lifestyles fell short, on the basis of being social distant from these new, predominantly working-class, ‘users’ relative to those clients with whom architects had previously shared a comparable social background (Lipman 1969, p.197; Riemer 1941, p.865).

Additionally accompanying the world wars and their aftermath was the meeting of the scientific and social imperatives of architecture with the conditions of austerity and wartime efficiencies. Precipitating from this was the prominent articulation of the user as 'scientifically' grounded "exact or optimal norms" (Garcia Ferrari et al. 2008, p.53), providing a basis for a mode of architectural production that was maximally standardisable, efficient and, thus, capable of being integrated with the climate of post-war reconstruction efforts. Significant, relative to this, is the coincidence of the term 'user' itself with the rise and wane of the welfare state and its building programmes (Forty 2004a, p.312).

### 3.4 CONCLUDING REMARKS

Here, the overarching theme is that, in the orchestration of knowing amongst the jostling agents of the architectural project, and the constitution of the user as 'object of knowledge', the agency figured as the architect is modulated or even 'bolstered'. When the architect speaks (and designs) they do so with the voices of 'objects of knowledge' marshalled behind them. Importantly, though, the architect mediates these and is, thus, rendered a kind of 'spokesperson'. One might frame this in terms of what the architect, in such practices, gains, or what are the uses, effects, or benefits of knowing, or manifestly knowing, being 'allied with' or 'spokesperson for' the user. The answers to these are varied, as varied as the modes of knowing the user. They might include the capacity to enact an identity as a 'people-concerned' architect, to bolster an understanding of their work as supporting "the underprivileged class" (Forty 2004b, p.314), or perhaps to convince others they are not solely direct by "'crude' financial considerations" (Lipman 1969, p.195). Alternately, it might be a manner in which the architect's services are given market value,<sup>22</sup> or, by simply increasing the objects of knowledge wielded by the practitioner, it may serve to reinforce their status as 'knowledgeable professional' (be that an end in itself, an obliged professional ethos, or a conscious means for increasing market control).

This, in itself, is maybe not of immense significance. However, what is noteworthy is that the user as an 'object of knowledge' effectively *displaces* other

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<sup>22</sup> One needn't look far in the marketing material or websites of architects to see that avowals to practice a 'user-focused' or 'people-centred' architecture have evident value in the market for services.

alternate 'user-ish' agencies from the architectural project, such as those who might claim to *be* the user. This is especially so when the enactment of the user as an object of knowledge takes on a scientific garb that provides the ground for defining such knowing as better than users can 'know themselves'. This was, indeed, the case, and took on an even more potent articulation, when, as Kostof (1989) notes, users didn't simply not know what they needed but didn't know what they *should* need, and any objections simply became teething issues in acclimatising to the new modern architecture. This is additionally significant in so far as alternate modes by which the user may bear on architecture may, in fact, even be a "threat" to the architect, particularly their status as 'author' (Hill 2003, p.3).

As Latour (2005, p.101) notes, objects other than people are far more recalcitrant and liable to object more veraciously to attempts to speak for them. We are generally far more likely to exert influence over this particular object than, say, the thermal mass of bricks, and find it less likely to object when its voice is obscured. Hence, investigating this manner in which the character of knowledge of this object might be influenced by the manner of its mediation appears particularly pertinent. The chapters to follow address this matter in the case of the knowing assemblage wrought about the handbook.

## MOBILE KNOWING

Given that architecture, an interconnected constellation of practices, is a multi-sited phenomenon, spatially dispersed as architectural offices, a concern with how knowing the user comes to be incorporated into architectural practice is, somewhat obviously (perhaps even tautologically), a question of mobility or the manner in which this knowing ‘travels’. Within the conception of knowing underlying this thesis this is, thus, a question of how the ability for knowing action is established in the composition of ‘knowing assemblages’ in dispersed sites of practice. This, thus, entails inquiring into how, and to what extent, a particular knowing assemblage is composed such that it is rendered mobile and, in this regard, ‘successful’.

Of particular value for this task is Shove, Pantzar & Watson's (2012) framework for apprehending the dynamics of practice. This is a conception of practice as composed of distinguishable elements and their interrelations, and, though practice and knowing are not entirely identical, their ontological equivalence (Nicolini 2011) provides the basis for this conception of practice usefully contributing to an account of knowing, particularly regarding mobility. The key insight here is that there is a distinction to be made between “elements – which can and do travel – and practices, viewed as necessarily localized, necessarily situated instances of integration (which do not travel)”. (Shove, Pantzar & Watson 2012, p.39). Similarly, ‘knowing’ or ‘knowing assemblages’ do not travel, but the elements of which they are composed do.<sup>1</sup>

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<sup>1</sup> Here, however, an apparent difficulty in appropriating this ‘elemental’ picture of ‘practice’ to ‘knowing’ arises, in the respect that the scheme drawn by Shove, Pantzar & Watson (2012, p.23) posits ‘competencies’ as one of three primary elements of practice, and under which they subsume various forms of know-how, background knowledge, and understanding. Apparently, this picture, contrary to the assertion above, seems to place ‘knowing’ as one of those *mobile* elements of which practice is composed. The response taken here is that, with some clarification, this does not, thus, make these contradictory positions. Firstly, it, rather, brings to surface the fact that, in the first instance, analytical moves are made (validly), to treat elements as if they had “a life of their own” (Shove, Pantzar & Watson 2012, p.44), which bracket the composed nature of elements themselves and the manner in which they are constituted in the integration of practice, for the purpose of providing useful tools for analysing practice. There is also, however, a possible divergence in conceptions of knowledge, especially given the multitude of knowledge-related terms that are employed in practice-based approaches. As regards this, it might be useful to make some kind of provisional distinction between ‘knowing’ and ‘knowledge’ on the one hand and ‘competencies’, ‘know-how’, ‘skills’, and ‘capacities’ generally in terms of their relation to an

Thus, in investigating the mobility of this mode of knowing the user, looking to the composition of the knowing assemblage wrought about the handbook, its elements and their relations, is the first step. To clarify, my purpose here is not to provide an absolutely complete picture of this assemblage, in all its minutiae, or to determine the limits of its extension. Rather it is to identify in this assemblage and its extension those aspects regarding its mobility that may bear useful insights into understanding the particular character of the success of this case of knowing. This chapter begins this task with an examination of the ‘content’ of handbooks, where I report on the results of content analysis into their particular renderings of the ‘user’ and the manner in which this content is linked to architectural matters. This provides the basis for analysis where I situate this knowing assemblage, and its manner of composition, within the complex of practices in which architectural labour transpires, and posit that particular distributions of competencies and delegations of labour amongst the elements in this composition provide the ground for its ‘mobile’ character and, in tandem, shape the character of the knowing accomplished.

#### 4.1 HANDBOOK CONTENT

In the knowing assemblages within which books figure, the ‘content’ of these artefacts is of obvious importance. Whether named ‘discursive material’, ‘representations’, ‘semiotic content’, ‘inscriptions’, or otherwise, the stuff ‘in’ books (and that they do this ‘containing’) is clearly a salient component of the action they are orchestrated within. The first half of this chapter addresses this content of the two primary texts analysed, the current English editions of *Architects’ Data* (Neufert & Neufert 2012) and *Architectural Graphic Standards* (American Institute of Architects 2016), in as much as it relates to the object of interest, the user. I report on an examination of the representation or construal of this object made by these texts. Given this, it is important to emphasise that such an effort (alone) does *not* amount to

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object of knowledge, i.e. in terms of a knowing ‘of’ (this being, thus, a matter of ascription but, also, a matter of analytical focus). But also of significance is that knowing can be pictured as itself composed of other knowing, a kind of nested picture (e.g. knowing how to draft an email may be composed of my knowing how to operate a keyboard, navigate emailing software, knowing how to write generally, and the spelling and grammar check software on my computer), and we might thus think of the later as those more elemental and less problematically ‘unitary’ instances of knowing or know-how. Explicating these ideas in their entirety here is, however, not tenable. Though, hopefully, their indication clarifies any apparent contradictions identified and provides stable enough ground for the account offered.

a description of the 'knowing the user' these artefacts take part in. Knowledge neither simply is nor is it located within the inscriptions found in books. However, their significance within the *particular* assemblage in which books figure, and within which knowing is constituted, warrants close attention and provides a useful starting point for examining this broader knowing assemblage.

After quickly thumbing through *Architects' Data* and *AGS*, the impression of the representation of the user one might likely receive would be that in which, at the fore, is this object's spatial extension and dimensionality, its position as a Cartesian body in space and location relative to other similarly extended and dimensioned bodies, and involvement in movements and activities that are likewise spatially extended and dimensioned. This is of particular significance given that, on some reports, (e.g. Anderson 2002; Buse et al. 2017; Frascari 1987; Imrie 2003) it is this rendering of the user that might very well be expected to be predominant given any familiarity with architects and architecture. The first task in the analysis I undertook of *Architects' Data* and *AGS* was, then, to go beyond such initial impressions and enquire into their construal of the user in a more systematic manner, there-by ascertaining a more complete and accurate impression of this representation.

## 4.2 CONTENT ANALYSIS METHODS

*Architects' Data* and *AGS* are both hefty tomes; *Architects' Data* runs to five hundred and ninety three pages in its current (fourth) English edition, and the current (twelfth) edition of *AGS* totals one thousand and sixty two. Not only are they large, they are also diverse in content; standard brick bonds, the height of church altars, the rearing of pigs, the width of beds, the diameter of urns, the turning circle of aeroplanes, typical variants in conservatory design, the transportation capacity of elevators, standard construction details for basement walls, conventional concrete formwork practice, and under-floor air-conditioning ducts are all found in their pages. If one's interest is in a single object the immediate task is, thus, to extract the content that pertains to this object in particular.

This first task, identifying all the occurrences or invocations of the user within *Architects' Data* and *AGS*, necessitated defining the bounds of such an 'occurrence' so that these might be identified, recorded and further analysed. For this purpose, the 'natural' units of the texts were employed: the short paragraphs, dot points, or similar divisions of text above sentence level. What made a unit an instance of an



occurrence of the user was defined, firstly, as that within which an identified group of terms occurred (including 'user', but also 'people', 'human', 'inhabitant', or other recognised synonyms both general, e.g. 'occupant', and particular, e.g. 'nurses'). These recognised synonyms are unified by (and new, more specific, synonyms encountered in the text were brought under this categorisation by) a common family of characteristics which it is sensible to attribute to them, but which it would not be sensible to attribute to other entities that may 'use' or 'occupy' (etc.) spaces or buildings, such as institutions or organisations (e.g. tall, walked, mortal, average resting heart rate). Also recorded were more 'implicit' occurrences. That is, content on matters of the user but where recognised terms ('user', 'people', etc.) are not present in the segment of text. The determination of such an 'implicit' occurrence was based on: 1) the structure of the text, that is, where the organisation of material renders it to be of the user (e.g. sections on "Building Biology" that begin with a definition of this in the terms of the "human" in a manner that renders the material within the section as representations of the user despite, perhaps, being absent of user designations in particular instances); 2) previous salient definitions made earlier in the text (e.g. later assertions regarding "movement areas" that were earlier explicitly defined in terms of the user); 3) attributes and actions (see below) that were previously ascribed to the user and are reasonably assumed to be attributes and actions of this object, rather than some other entity (e.g. "walking/walking distance", "emotional response", "social interaction", "sight/vision").

These analytical moves, bringing together a number of terms as denoting a common object and of identifying 'implicit' occurrences of these, were performed with the full awareness that this was, in fact, that same activity of association that was being investigated, the composition of this object of knowledge, the user, in architecture (as outlined in §3.1). Consequently, so as to assure these were not solely moves of the analyst, care was taken to ensure that any associations that were taken up were those that were made, at least once, within the text itself, and not purely an artefact of the analysis.

In this way, the entirety of the text of both handbooks was coded for 'user-related' content. Additionally, tabulated text presented as separate figures within the body of both handbooks was coded in the same manner. As a result of this process of extracting user-related linguistic content, 421 occurrences were identified in *Architects' Data* and 591 in *AGS*. Table 1 below provides some examples.

<b>Architects' Data</b>	<i>Revolving doors are made in several different designs. Some are adjustable, e.g. when the number of users is large, particularly in the summer, the panels can be folded into the middle to allow people to go in on one side and out on the other simultaneously. (Neufert &amp; Neufert 2012, p.115)</i>
	<i>A human being requires the most space at handrail height, and considerably less at foot height. The stair width here can be made narrower in favour of a larger stairwell. (Neufert &amp; Neufert 2012, p.122)</i>
	<i>High cupboards and shelves should be suitably positioned relative to the working areas and should be comfortable to reach. Worktops placed at the correct height for the relevant activity can make kitchen work considerably easier. (Neufert &amp; Neufert 2012, p.154) [this instance illustrates an 'implicit' occurrence, where-in 'reach' and 'comfortable' are sufficiently linked with otherwise explicit occurrences of the user to justify this text being recorded]</i>
<b>Architectural Graphic Standards</b>	<i>Passenger elevators: Used to convey people from floor to floor. Elevator cars are available in standard and custom designs. (American Institute of Architects 2016, p.650)</i>
	<i>Closers with delayed-action features give a person more time to maneuver through doorways. They are particularly useful on frequently used interior doors such as entrances to toilet rooms. The ADAAG requires a closing speed of at least three seconds; ANSI requires five seconds. (American Institute of Architects 2016, p.587)</i>
	<i>In a typical roofing assembly, the waterproof membrane (built-up, modified bitumen, or single-ply) is applied over the insulation, which is on top of the substrate and/or structural deck. The membrane in this situation is exposed to temperature extremes, as well as wear and tear from people walking or working on the roof. (American Institute of Architects 2016, p.492)</i>

**Table 1: Example 'user occurrences' in Architects' Data and AGS**

This material provided the basis for further coding to examine the character of these representations of the user. This task was broken up into recording material to two categories. Firstly, the 'action' in which the user was embroiled by the text, including both that for which the user was the agent and as the patient/target, and, secondly, the 'attributes' otherwise ascribed to it. Recorded under the category of 'action' were the verbal groups in which the user was involved, but also any nominalised or adjectivised action in which the user was implicated. The category of 'attributes' covered the remainder of characteristics ascribed to the user in an occurrence. This schema was intentionally broad and simple, to simplify this process of analysis and avoid becoming tangled in metaphysical questions entailed in coding material to a more numerous and nuanced set of categories (for example, Hallidayan

'process types'; see Halliday & Matthiessen 2014). In practice, this simplicity presented no issues for analysing and recording material. Thus, the first segment in Table 1 above would result in the recorded attribute of "large number" and recorded actions of "go in" and "go out" (where the user is agent) and "allow" (where they are patient). In the case of *Architects' Data* 538 attributes, 584 actions where the user was agent, and 151 where the user was patient were recorded, with 605, 1040, and 194 recorded for each in AGS.

### 4.3 A 'SPATIAL' USER

With this corpus of attributes and action gathered, a firmer ground for ascertaining a more complete and accurate account of the construal of the user offered by *Architects' Data* and *Architectural Graphic Standards* was available. Immediately evident was that the representation of the user within this linguistic material is certainly more complex and diverse than a simple reduction to, or overwhelming predominance of, the aforementioned 'spatial' object that one might initially expect. Present in both texts are a host of attributes and actions that suggest diverse aspects of those people that dwell within buildings. For example, their emotional and cognitive dimension (attributes like "feeling of safety" or "impulses", approximately 5.4% of attributes collected from *Architects' Data* and 6.9% from AGS, and action like "recognition" or "concentration", approximately 7% of action collected from *Architects' Data* and 5.7% from AGS), sensory dimension (attributes like "field of vision", approximately 2% of attributes collected from *Architects' Data* and 8.8% from AGS, and action like "hear" or "see", approximately 10.1% of action collected from *Architects' Data* and 10.0% from AGS), and social interaction (attributes like "responsible for care" or "mostly independent of outside help", approximately 2.6% of attributes collected from *Architects' Data* and 1.8% from AGS, and action like "taking meals together" or "conversation", approximately 10.3% of action collected from *Architects' Data* and 5.0% from AGS).<sup>2</sup>

It is hard to conceive of any object more familiar and of which representations are more frequently encountered than human beings. That, thus, the representations aggregated within texts as sizeable and diverse as contemporary architectural

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<sup>2</sup> These illustrative categories, and the attributes and actions counted under them, are not intended to be mutually exclusive (though they are, in the results, primarily so).

handbooks extend beyond those 'spatial' aspects (that might otherwise be prominent) should not be too surprising. One might be hard pressed to accuse their rendering of the user to be absolutely reductionist or impoverished, as one might expect to be a possibility given occasional accounts or indications of architect's conceptions of human beings. Nevertheless, there does remain an apparent skew towards those 'spatial' aspects of the user in the corpus of attributes and actions.

In determining the weighting of this corpus of attributes and actions towards the user's 'spatial' aspects, four categories were employed for counting items. These categories were 'movement' (example attributes and actions including "turn", "cross", or "circulating"), 'spatial position or location' (e.g. "in front of the enclosure", "distance from neighbour", or "arrangements"), 'bodily dimensions' (e.g. "131cm", "average height", or "stride length"), and 'bodily posture' (e.g. "reach", "seated", or "taking off and putting on coats"). Subsuming attributes and actions under these categories was not determined solely by reference to the word groups or phrases themselves but in also referring back to their context in the text, in order to confirm their meaning.<sup>3</sup>

The counts recorded for each of these categories is given in Table 2 below. As an approximate percentage of the total attributes, actions (user as agent), and actions (user as patient) recorded those of this 'spatial' character were, for *Architects' Data*, 22.3%, 23.9%, and 16.6% respectively (or 22.4% of both categories of action combined), and, for *AGS*, 14.7%, 33.9%, and 12.9% respectively (or 30.6% of both categories of action combined).

Asserting an apparently 'skewed' character of a representation is, of course, fairly meaningless without some other comparative material (Krippendorff 2004, p.202). Ascertaining an otherwise 'true/r', 'more correct', or 'more comprehensive/more representative' representation, or a representation more congruent with how things 'really' are, in order to demonstrate the character of another, is, of course, problematic. As, likewise, is attempting to pin down a 'norm' that one might employ as a standard for comparison (Fairclough 2003, p.143),

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<sup>3</sup> A smaller number of attributes and actions were also subsumed under these categorisations that were not as evidently or explicitly (based solely on the recorded word group or phrase) 'spatial' but which, based on the context of their use, were otherwise implicitly so. An example case being the action "carrying loads" which may not obviously fall under the categories of 'movement', 'spatial location or position', 'bodily dimensions', or 'posture' but which, given its context "With a 100 cm step width, people carrying loads have sufficient room for movement" (Neufert & Neufert 2012, p.126), is evidently a matter of it being significant in so far as it alters the bodily dimensions of the user.

especially in the case of representations of human beings on account of, again, the sheer number and diversity available. Rather, a more appropriate aim is to compare some particular representation with otherwise distinct representations (with no more of a claim to a more correct or representative status) to, at least, bring out the relative specificity of each.

	<i>Architects' Data</i>			<i>Architectural Graphic Standards</i>		
	Attributes	Action (agent)	Action (patient)	Attributes	Action (agent)	Action (patient)
Movement	3	96	12	4	297	12
Location/Position	19	5	9	20	11	9
Bodily Dimensions	94	11	3	64	12	3
Bodily Posture	4	28	1	1	33	0
<b>Total</b>	120	140	25	89	353	25

**Table 2: Frequency of 'spatial' attributes and actions identified in 'user occurrences' in *Architects' Data* and *AGS***

Richard Neutra's writing provides useful material for this task. Firstly, on account of his status as a practicing architect, like Neufert and Ramsey and Sleeper, active at roughly the same time as these authors. Further, for his similarly noted emphasis on knowing the user (in his case involving questionnaires, observation, and a brand of psychosomatic analysis) (Lavin 2004) and as a noted forerunner of contemporary branches of 'human-oriented' architecture (Robinson 2015). Finally, his book, *Survival Through Design* (Neutra 1969) was penned at a similar date (though, not a 'handbook'). Employing the same methods as above, from a sample of five of the short essays in this book, 79 'user occurrences' were compiled and 265 attributes, 191 actions (agent), and 88 actions (patient), were identified, of which approximately 2.6%, 6.2%, and 2.3%, respectively, were of a 'spatial' character. Though a small sample and simple comparison, this, at least, serves to give some indication of the particular character of the handbooks' 'user'.

#### 4.4 PICTURING THE 'USER'

However, the user is not solely represented in *Architects' Data* and *AGS* within linguistic content; it is additionally present in graphical material. Furthermore, the representation within this graphical content might justifiably be regarded as the more salient and significant, given its relative significance of linguistic content within handbooks. A simple comparison of the amount of space accorded to figures over blocks of text on the pages of the handbooks reflects this. More precisely, a sample of forty randomly selected pages from each text revealed 66% of space in *Architects' Data*, and 70% in *AGS* to be given over to figures. Extensive sequences of pages composed more-or-less solely of figures, with text serving principally to preface these, are a frequent within *AGS*. The text and figures within *Architects' Data* are, generally, more integrated, but the relative significance of the graphical material is evident in a recurrent emboldened figure references (e.g. →**③**) that continually shift the reader towards the graphics on the page. The writing is terse, elliptical where possible, and, indeed, as Gropius (1936) indicates in his review of the first edition, somewhat superfluous.<sup>4</sup>

The prominence of this graphical material is especially significant, and more-or-less expected, given its importance for architects. The architect's disposition to disregard the linguistic content of texts in favour of graphics is longstanding and well-acknowledged, and can be witnessed, since the advent of the printed image within books, in the tendency for the excision of text in favour of greater graphic material in publications, be they simple 'books of orders', elaborate folios, journals, or online magazines. A remark made in a 1878 issue of *The American Architect and Building News*, that only a "small minority... reads and inwardly digests the full text" of architectural publications and the remaining majority simply "derive their impressions of a book not from reading it, but from turning over the pages merely for the sake of the prints" (AABN 1878, p.199), could be mistaken to have come from innumerable moments in architectural history, including our own. One might fairly safely assume that Neufert was consciously aware of privileging graphical material and of the significance of this in the context of architectural practice; he notes of his work that "[de]scription is often reduced to the absolute minimum and supplemented or even

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<sup>4</sup> "As the illustrations are self explanatory the book is useful even for those who don't speak German" (Gropius 1936, p.174).

replaced with illustrations wherever feasible” (Neufert & Neufert 2012, p.26). In the case of Ramsey and Sleeper, however, we can be sure of the fact that this figured in their authorship of AGS:

*[Architects] like to read drawings. Their trained eyes can see and comprehend a page of drawing much faster than they can a page of printed words, and from my experience, I know that they enjoy looking at drawings much more than they do reading.* (Sleeper, cited in Johnston 2008, p.144)

Consequently, determining how the user is rendered in this graphical material is pertinent. As in the case of the linguistic material analysed, the bounds of a single occurrence was determined by the natural division of numbered figures. Such occurrences are fairly evident in some cases, those that are most figural or figurative (in the artistic sense of the term), where the human figure is easily spotted (as in Figure 1 below). However, those in which the depiction of the user is relatively abstract are less obvious, but still discernable (as in Figure 2 below). Additionally, there are cases where the user is represented more ‘diagrammatically’, and in these instances is identified, more-or-less, solely by annotations (as in flow charts, bubble diagrams or similar). Occurrences under each of these categories of ‘figural’, ‘abstract’, and ‘diagrammatic’ representation were identified and recorded, and resulted, from *Architects’ Data*, in 308, 13, and 11 instances respectively, 78, 4, and 4 from AGS.<sup>5</sup>

I then coded these occurrences according to six categories with a focus on the ‘spatial’ aspects of the user. These recorded instances where the user’s body was dimensioned, and, also, where the user’s activities were dimensioned. Figures were also coded as to whether the depiction entailed the illustration of the manner in which the dimensional or spatial realities of either the user’s body or their activities (two separate coding categories) determined the dimensioned characteristics of a building (see Figures 3 and 4) or, likewise, determined any other un-dimensioned characteristics of a building (these may be dimensional characteristics, such as the height of a window, but where specific dimensions are not given within the drawing, or they may be otherwise non-dimensional characteristics of a building, such as a particular material).

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<sup>5</sup> As noted in §4.2 above, tabulated text also numbers in the range of figures provided in the handbooks. These occurrences were also identified and recorded but, as noted previously, treated along with the other linguistic material within the body of the text.

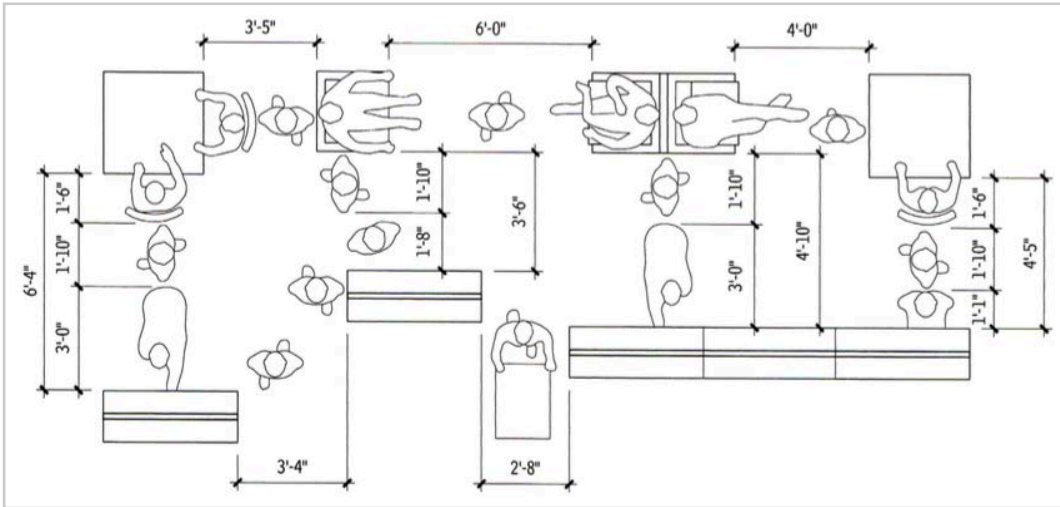


Figure 1: "Lounge Chairs, Tables, and Shelving Layout" from AGS (American Institute of Architects 2016, p.868). Reproduced with courtesy of Wiley. Copyright © 2016 by John Wiley and Sons, Inc.

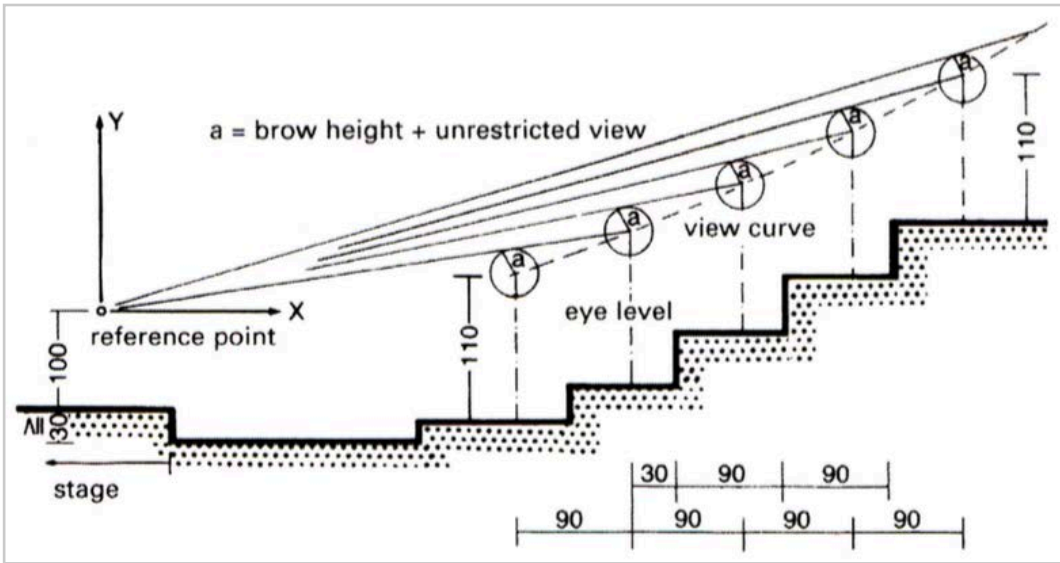


Figure 2: "Geometrical determination of the listener curve" from *Architects' Data* (Neufert & Neufert 2012, p.198). Reproduced with courtesy of Neufert-Stiftung, Germany.



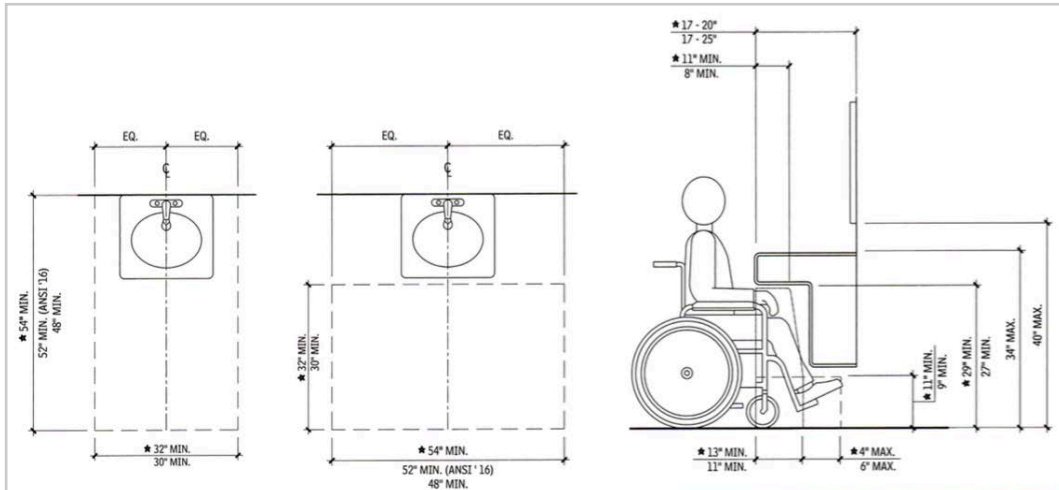


Figure 3: “Lavatories” from AGS (American Institute of Architects 2016, p.57). Reproduced with courtesy of Wiley. Copyright © 2016 by John Wiley and Sons, Inc.

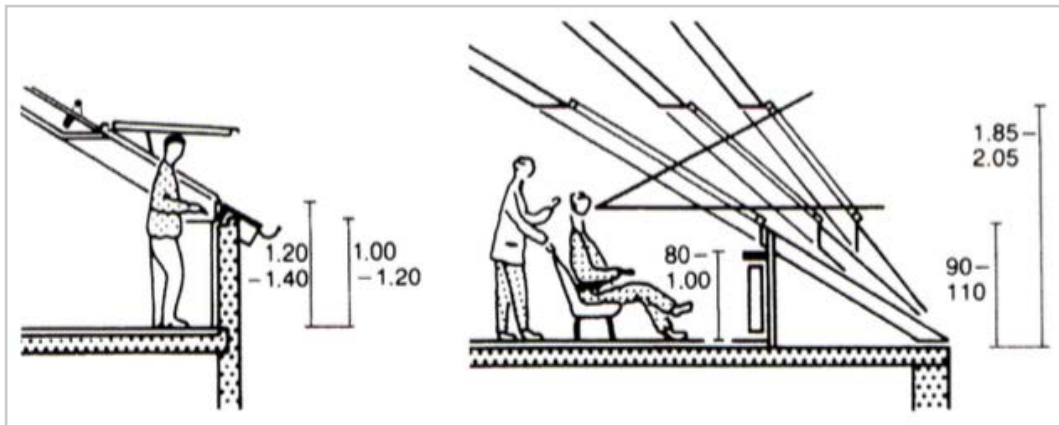


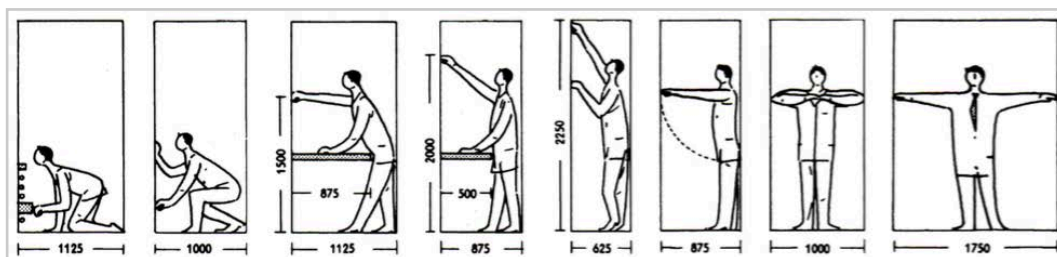
Figure 4: “Installation heights for loft windows” from *Architects’ Data* (Neufert & Neufert 2012, p.102). Reproduced with courtesy of Neufert-Stiftung, Germany.

Table 3 below gives the recorded number of occurrences that were coded to each of the aforementioned six categories where the ‘spatial’ aspects of the user were manifest. The total number of occurrences for which any of these categories were recorded was 258 for *Architects’ Data*, making this 77.7% of the total 332 recorded graphical occurrences of the user. The total number of occurrences for which any of these categories were recorded was 68 for *Architectural Graphic Standards*, making this 79.1% of the total 86 recorded graphical occurrences of the user.

	<i>Architects' Data</i>	<i>Architectural Graphic Standards</i>
Dimensioned Body	64	28
Dimensioned Activity	33	10
Dimensioned Building Characteristic (from Body)	157	31
Dimensioned Building Characteristic (from Activity)	61	13
Undimensioned Building Characteristic (from Body)	11	7
Undimensioned Building Characteristic (from Activity)	22	6

**Table 3: Frequency of 'spatial' aspects in graphical occurrences identified in *Architects' Data* and *AGS***

Of further significance is the foregrounding of the 'spatial' aspects of the user in those occurrences in which it is more-or-less solely the user that is depicted. Such occurrences, usually confined to the early sections of the book addressed specifically to the user, totalled 34 in *Architects' Data* and 17 in *AGS*. Of those in *Architects' Data* 32, approximately 94.1%, of these featured either the body or activities of the user dimensioned, and 100% did so in *AGS*. Figures 5 and 6 are fairly typical of such occurrences.



**Figure 5: "Space required for various body postures" ("Kneeling", "At the desk", and "Stretching") from *Architects' Data* (Neufert & Neufert 2012, p.29). Reproduced with courtesy of Neufert-Stiftung, Germany.**

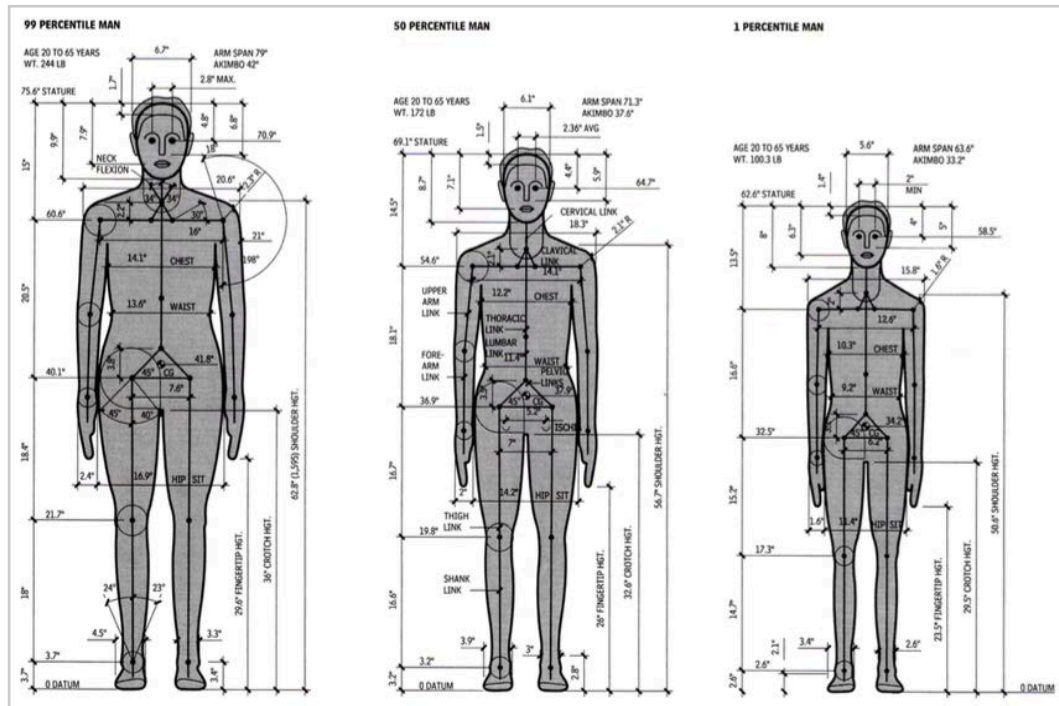


Figure 6: “Measure of man: front view” from AGS (American Institute of Architects 2016, p.14). Reproduced with courtesy of Wiley. Copyright © 2016 by John Wiley and Sons, Inc.

#### 4.5 THE PREDOMINANCE OF THE ‘SPATIAL’ USER

Beyond simple frequencies, there is, additionally, an evident hierarchy in the representations of the user within the handbooks, bound to the privileged positioning of certain semiotic content. Those early sections of the handbooks that specifically introduce and address the user place a spatial rendering of this object at the fore, both in the ordering and quantity of material. In *Architect’s Data* (2012, pp.26–29), a half-page depiction of a man (see Figure 7), limbs outstretched and proportioned, followed by a sequence of two full pages solely of figures on “Body Measurements and Space Requirements”, accompany an opening section on “Man as Measure and Purpose”. The case is much the same in AGS (American Institute of Architects 2016, pp.4–18), where a section specifically introducing “Human Factors” is dominated on all fourteen pages by the recurring graphic of dimensioned figures of various ages, then of a variety of statistic percentiles of adults, while the first subsection of text addresses “Anthropometrics and Ergonomics”. The apparent primacy, priority, and self-evidence of the ‘spatial’ rendering of the user also manifests in occasional passages of the sort that make the point that “[t]he human being, however, is not just a living creature that needs space. The emotional response is no less important”

(Neufert & Neufert 2012, p.26). The structure of such assertions positions the 'spatial' reality of the user as a given, and not necessary to be actively asserted relative to other characteristics.

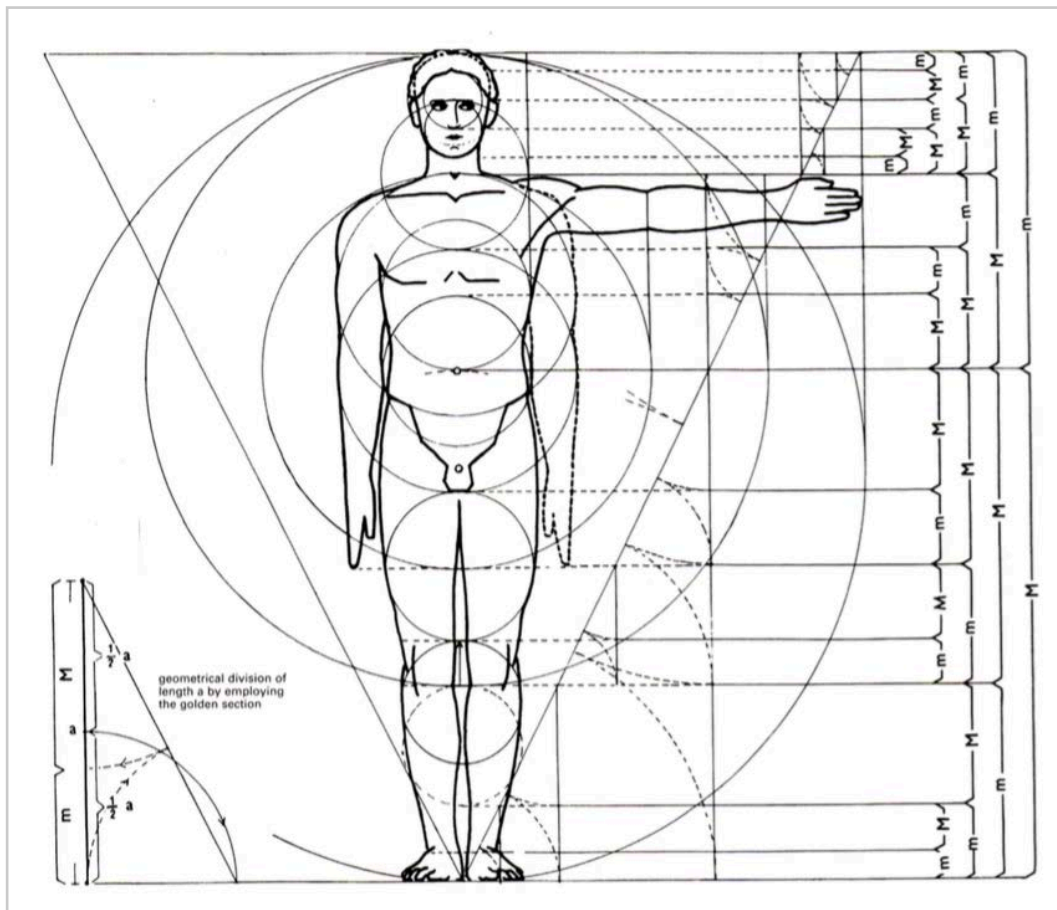


Figure 6: Untitled image from *Architects' Data* (Neufert & Neufert 2012, p.27). Reproduced with courtesy of Neufert-Stiftung, Germany.

#### 4.6 CONTENT ANALYSIS METHODS

However, this study is not simply concerned with such representations in themselves, it is concerned with the knowing of which they are a part. To continue this task of apprehending the composition of this knowing assemblage, attention must be turned to action, specifically the action that this semiotic content is orchestrated within in architectural labour. Persisting with this primary examination of user-related 'content', and given an orientation to the knowing action transpiring in practice, one feature of occurrences of the user identified within *Architects' Data* and AGS is especially notable. The following extract provides a useful illustration:

*Emergency exits 1.0 m wide per 150 people using them.* (Neufert & Neufert 2012, p.175)

The aspect of interest here is that the invocation of the user is bound to a prescription, specifically, a prescription related, expectedly, to matters of architecture and building. In other words, and more broadly, user-related content is not present within the handbook simply as 'bare fact', 'information', or 'data' solely on the user, but is additionally discursively bound to matters of architecture and building. This is of particular interest relative to a concern with the action these texts are embroiled in, in that it implicates the content on the user in a particular regime of action: that which would precipitate the prescribed architectural reality - the width of an emergency exit. Of interest, then, are the types of architectural and building matters that, within the handbooks, are bound to or associated with matters of the user. This directed the second round of content analysis undertaken.

Using the same 'user occurrences', I first established a set of three broad categories of 'linkages'. Firstly, those in which no explicit linkage was made between the user and architectural or building matters were recorded (labelled 'Type 1'),<sup>6</sup> these were the most infrequent (33 in *Architects' Data*, and 12 in *AGS*). Secondly, those occurrences where the user was bound to *specific* matters of architecture and building (labelled 'Type 3'), such as the dimensions of a hallway, the number of WCs, or the particular ambience of a room. These were the most numerous instances, numbering 629 in *Architects' Data* and 941 in *AGS*. Finally, I established an intermediate category of linkages for those which bound the user to matters of architecture in more general terms ('Type 2'), including where the user figured (prominently or in part) in definitions made of particular building types or components, as conditions or aims to be met, considerations or factors to be included in design, or criteria by which architectural realities might be judged. This intermediate category recorded 137 instances in the case of *Architects' Data*, and 260 in *AGS*.

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<sup>6</sup> Though, to say the text makes no linkage at all would be incorrect, as its presence within the text itself discursively binds it to matters of architecture.

	<b><i>Architects' Data</i></b>	<b><i>Architectural Graphic Standards</i></b>
<b>Specific Length, Width, or Height</b>	<b>183</b>	<b>157</b>
<b>Specific Area</b>	<b>37</b>	<b>2</b>
<b>Specific Volume</b>	<b>1</b>	<b>0</b>
Specific Number	3	0
<b>Unspecific Length, Width or Height</b>	<b>24</b>	<b>64</b>
<b>Unspecific Area</b>	<b>12</b>	<b>11</b>
<b>Unspecific Volume</b>	<b>0</b>	<b>0</b>
<b>Rates of Length, Width, or Height</b>	<b>8</b>	<b>0</b>
<b>Rates of Area</b>	<b>27</b>	<b>0</b>
<b>Rates of Volume</b>	<b>5</b>	<b>1</b>
Rates of Number	40	17
Rates of Mechanical Operation	9	2
Type of Room or Space	55	40
<i>Object, Element, Fitting, or Similar</i>	84(65)	149(126)
Quality of Object, Element, Fitting, Room, or Space	35	176
Multi-Element System	11	34
<b>Material or Construction Method</b>	<b>13</b>	<b>65</b>
<b>Spatial Arrangement</b>	<b>39</b>	<b>116</b>
Consult or Adhere to Other Standards or Documents	18	95
Consult Additional Professionals	1	4
Consult Additional Stakeholders	2	1
Typical, Exemplar, or Case Study Design	22	7

**Table 4: Frequencies of identified categories of 'linkages' between the user and matters of architecture and building in *Architects' Data* and *AGS***

It is this strongest category of linkages ('Type 3') that are of most interest, given the action they implicate. Such linkages can be regarded as essentially prescriptive, though the manner this prescribing is wrought discursively varies, including, for example, more direct imperatives or less direct prescriptions via appraisals of certain architectural realities over others. Thus, I established a set of categories, emergent from the linkages compiled, to determine the range of types of matters of architecture that were bound to or prescribed on the basis of matters of the user. These categories are listed and their frequencies tabulated in Table 4.

#### **4.7 'DRAWING CONGRUENT' LINKAGES**

During coding, and on determining (and reflected in<sup>7</sup>) the final set of categories of 'linkages' and their frequency, the overarching characteristic of interest that became evident, in the context of elucidating the knowing assemblage in which they figure, is what will be called the 'congruence' of these linkages (that is, of the matters of architecture and building they specify) with architectural drawing. That is, the linking of matters of the user to particular matters of architecture and building that, by virtue of the nature of architectural drawing practices and conventions (forms of two-dimensional orthographic projection, including plans, sections, and elevations, principles of scale, line drawing, symbolic conventions, and the techniques and tools, such as paper, pencils, pens, rules, computers screens, keyboards, and mice, used to achieve these), are simply, clearly, or 'self-evidently' translated into lines on a page (or computer screen). The means at hand in the production of architectural drawings are such that the assertion that, for example, the user necessitates that "[e]ntrance recesses should be at least 1.25 m (better 1.50 m) wide and approx. 1.00 m deep, so that two people can wait comfortably and protected in front of the door" (Neufert & Neufert 2012, p.146) bears more-or-less obviously on the act of drawing (e.g. making a line of a certain length, employing a scale rule, or applying dimensioned lines to a figure) and of confirming a drawing's accordance with such a prescription. In contrast, asserting that the user necessitates, say, 'a homely atmosphere' leaves, comparatively, a fairly evident 'gap' in terms of exactly how this

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<sup>7</sup> For instance, "Quality of Object, Element, Fitting, Room or Space" is the catchall for linkages that were of qualities not directly congruent with drawing (i.e. not those otherwise highlighted as such – "Specific Length, Width, or Height", etc.) that might be further categorized if the focus was otherwise.

might bear on the marking of a sheet of paper or perhaps plotting a line on a computer.

It is important to note that any translation of discursive material into some other form of non-discursive action is not without requisite know-how, and this is the case also for the aforementioned 'drawing congruent' material. The use of the term 'self-evident' to describe these is not to indicate the absence of this effort or competency of translation but that it (always relatively) needn't require (or require much) reflection to achieve. This also implies a 'self-evidence' *for someone* (i.e. with a particular set of competencies), in this case, architects, and this will be elaborated in the discussion to follow.

This frame of 'drawing congruence' (specifically, *architectural* drawing) provides for specific interpretations of each of the matters of architecture and building to which the user is bound within the handbooks. My suggestion is not that such linkages are either congruent or not with drawing, rather that they are as such in different ways and to different extents or to more or less 'directness'. In Table 4 above, the most congruent linkages are emphasised in either bold or italics. Firstly, there are those most strongly 'drawing congruent'. "Specific Length, Width, or Heights" or "Rates of Length, Width, or Height", for instance, clearly bears simple translation into architectural drawing, given the core act of making lines of a given measured dimension (with various artefacts for this specific task, such as scale rules) or annotated dimension, the principles of two-dimensional projection and scaling (affording that depicted elements, in the act of drawing, are dimensioned by virtue of being placed on the two-dimensional plane of the drawing), and graphic conventions for the annotation of dimensions of depicted elements. This is similarly the case with "Specific Area", "Specific Volume", "Rates of Area", and "Rates of Volume" (given, perhaps, some simple calculations). Relative to these are those categories of "Unspecific Length, Width, or Height" and "Unspecific Area" which, though not as 'immediately' translatable into drawing, retain the same logic and congruence as those which make linkages between the user and specific lengths, widths, heights, or areas of elements. "Spatial Arrangement", likewise, falls within this same 'logic' of spatiality congruent with orthographic projection. Then, there is the category of "Material or Construction Method", deemed 'drawing congruent' on the basis of the comprehensive corpus of symbolic conventions within architectural drawing for the specific purpose for indicating materials or methods of construction.



“Object, Element, Fitting, or Similar” was also noted for its ‘drawing congruence’ on the basis that it is more often than not that such linkages were accompanied by a drawing (either linked via in-text references, proximity, or prominent earlier sections featuring numerous depictions of a particular object or element) dimensioned and depicted as per the conventions of architectural drawing. Additionally, the most generic types of such objects, elements, and fittings have, like materials, standard conventions for their depiction in architectural drawing (which, furthermore, are provided comprehensively at the beginning of *Architects’ Data*). These instances, linked to drawings or generic elements for which there are established conventions, totalled 65 for *Architects’ Data* and 126 for *AGS*.

Additionally noteworthy is that standards, and the other documents the reader is referred to from the handbooks, similarly typically make linkages in a ‘drawing congruent’ manner. Systematically surveying these documents was not within the scope of this research, however, and, thus, though a linkage worth noting (especially given the frequency in *AGS*), they were not classified as ‘drawing congruent’.

This is not to say that the rest of the categories identified are ‘untranslatable’, ‘undrawable’, or only problematically translated. Rather, that they are less immediately so. That is, the ‘gap’, crudely, the additional ‘steps’ required to reach the drawing is greater and thus, additionally, perhaps less certain in its outcome (that is, more dependent on the ‘translator’).

These most ‘drawing congruent’ linkages, combined with instances of prescribed ‘Objects, Elements, Fittings, or Similar’ linked to drawings, numbered 454, approximately 72.2%, of the total 629 ‘Type 3’ linkages identified in *Architects’ Data*, and 542, approximately 57.6%, of the total of 941 ‘Type 3’ linkages identified in *AGS*.

However, more importantly, the binding of the user to practices of drawing is not solely by virtue of the ‘drawing congruence’ of the linguistic material. As already emphasised, the handbooks are themselves eminently graphic. Indeed, given any familiarity with these texts, the frame of ‘drawing congruence’ immediately elicits the image of a figure simply being copied directly from page to paper, rather than the character of the linguistic material. The user is, thus, bound to practices of drawing simply by being linked to actual drawings, in the handbooks, ready to be appropriated and transposed, (as noted for ‘Object, Element, Fittings, or Similar’ linkages). Whether they be copied out (to varying extents of accuracy or fidelity) from the page of the book to the drawing board, or even traced over with a sheet of trace, they, as

Vossoughian (2015, p.681) identifies, “almost invite plagiarism”. The user is linked to this manifestly and intentionally ‘copy-able’ drawn matter by either references from within linguistic occurrences of the user (i.e. figure references, as outlined above) or by their graphic presence within the drawn material itself. With this frame, the apparently less frequent drawing congruence of the linkages of AGS can, instead, be seen as this material simply *already having been translated into drawing itself*. In the words of Ramsey and Sleeper themselves, “[t]o translate the facts most quickly for those accustomed to making and using drawings, we chose the graphic form of presentation” (Ramsey & Sleeper 1932, n.p.).

#### 4.8 THE ‘DRAWN’ USER

Given the prominence of this ‘drawing congruence’ of the occurrences of the user within *Architects’ Data* and AGS, it is pertinent to return to the ‘spatial’ rendering, or foregrounding of the ‘spatial aspects’, of the user. In the context of the prior discussion, the ‘spatial’ character of this rendering could justifiably be labelled its ‘drawing congruent’ character. That is, the evident ease with which one translates these particular aspects (spatial extension and dimensionality, its position as a Cartesian body in space and location relative to other similarly extended and dimensioned bodies, and involvement in movements and activities that are likewise spatially extended and dimensioned) into prescriptions of matters of architecture that are of the aforementioned ‘drawing congruent’ character and, therefore, the congruence of this particular body of semiotic content with practices of drawing. This asserted ‘ease’ or ‘self-evidence’ of translatability is apparent in, for example, those figures in *Architects’ Data* (see, for example, Figure 5) where there is an uncertainty,<sup>8</sup> a slippage of sorts, as to whether what is depicted are the dimensions of people in various postures and undertaking various activities, or the prescribed dimensions of space required or recommended for accommodating such postures or activities (and, indeed, if there is a difference). To reiterate this slightly differently, this ‘spatial’ user is, simply, the ‘drawn’ user, specifically *architecturally drawn*. Their translation into ‘drawing congruent’ prescriptions of architectural matters or acts or drawing is, thus, relatively simple; they are of the same ‘language’, the “language of the draughting room” (Ackerman 1932, n.p.).

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<sup>8</sup> To clarify, this is not to suggest that it is irresolvable or un-decidable as to which is depicted, but simply that a contention would not be unjustified.

This is a suitable point to emphasise the affordances of the practices of architectural drawing both as a component of prescriptive projects but, also, of descriptive tasks. That is, practices otherwise employed to direct the erection of bricks and mortar need only minor modification (perhaps the addition of a instrument of measure and accompanying skills) to transform them to, for example, produce inscriptions of the Temple of Paestum. Architectural practice culminates in notably massive and immobile structures. Of importance, therefore, regarding the change and reproduction of this practice, is the corpus of objects into which these structures are inscribed and through which they travel. However, to frame both the preceding point on the ‘drawing congruent/spatial’ user as well as the discussion to follow, just as by the fact that drawings capture “only certain aspects of the physical world” and there-by “limit the types of object architects usually design” (Hill 2003, p.25; see also Latour & Yaneva 2008) so too does it limit (or, at least, shape) the kinds of objects known and knowing made.

In this ‘drawing congruence’ of the occurrences of the user and their accompanying ‘spatial’ character are implicated two important aspects of architectural labour and the knowing assemblage wrought about the architectural handbook. Firstly, (as has, perhaps, already been implied) the significance and centrality of drawing practices within the totality of practices of architecture is evidently reflected in these texts. Secondly, closely related, the location of the use of the handbook within the spatio-temporal array of practices in architectural offices is also discernable. To continue elaborating the composition of this knowing assemblage, I turn to these two aspects in the next section.

#### **4.9 THE LOCUS OF DRAWING**

That *Architects’ Data* and *AGS* cast the user and its relation to architecture in terms that approach and revolve about the locus of drawing is, perhaps, not unexpected, given drawing is so “deeply intertwined” (Ivarsson 2010, p.172) in the nexus of practices that is architecture. Drawings and the production of drawings hold a central position within the site of the architectural office and the process of architectural labour. This is so for the contemporary configuration of architectural practice and in terms of the broader history of the modern iteration of the architect.

At this point, it is important to make a brief aside to clarify the temporal scope of the account I offer. As the foregoing analysis makes clear, the focus here is the

current *contemporary* iterations of the handbook. Though, it is important to note that these are temporally extended and ongoing projects (both over eight decades) and, indeed, it is as such that they are understood in the account of the knowing assemblage presented (I would argue, necessarily so). However, this presents immediate issues given the premise that to construct this account is to analyse the composition of this knowing assemblage in the context of the complex of practices that is architecture. That is, this complex of practices is no static entity. As anyone familiar with architecture will recognise in the follow material, drawing is no longer limited to paper and drawing boards. Architects are now just as likely to copy-paste CAD details than to draw them. Though it may appear at times in the descriptions of practice to follow that I ‘flatten’ the historicity and variations in drawing practices, this is far from my intention and, hopefully, not the result. Rather, my intention is to point to those persistent general aspects and note that, though drawing practices have varied over the history of this knowing assemblage, it is these persistent aspects that are drawn into the account offered.

Firstly, the architectural drawing is that in which and towards which architectural labour coalesces, primarily. The work of the architect can be seen as, in large part, an effort of bringing together (and, in part, defining), ‘juggling’ (Latour & Yaneva 2008, p.84), the diverse ‘factors’, ‘concerns’, or otherwise framed agencies that bear on the project into some kind of resolution, employing transformations into a variety of mediums and finally concretised in the architectural drawing. Iedema’s (2001) description of ‘resemiotization’, where outcomes of negotiations are rendered into increasingly obdurate and less-contestable forms culminating in the drawing and, thereafter, the physical building itself, evidences this. Likewise, Oak’s (2009) describes architects’ persistent attempts to cast conversations and attempted resolutions met with clients in terms congruent with drawing or in acts of drawing themselves. Drawing/s provide a locus around which interactions (between architect and client, architect and consultants, or amongst office member) are articulated, and a vehicle with which their results are concretised, mediated, and carried on from meeting tables (Cuff 1992a, pp.185–188; Ewenstein & Whyte 2007, 2009). Furthermore, exchanges between members of an architectural office are mediated via various modes of drawings. Sketches or ‘diagrams’ (Brown et al. 2010) are disseminated from up the hierarchy and direct the genesis and development of designs (and demarcate, maintain, and mediate the status of seniors). These undergo attempts at transformation, developed and redrawn by other practitioners into ‘harder-line’ mediums (whether involving harder pencils, pens, rules, and lines

with definite measurements, or the unavoidable definiteness and precision of the CAD interface and print-out) (Ewenstein & Whyte 2007, pp.702–703; Kornberger, Kreiner & Clegg 2011, p.145) to be returned to their source, only to be sent back overlaid with and accompanied by additional sketches and annotations, in a cyclical process of ‘mark-ups’ transactions and recurrent transformation in mediums across paper, rolls of trace, computer screens, and print-outs (Ewenstein & Whyte 2009, pp.24–25) where-in this emerging collection of artefacts, the ‘design’, is progressive ossified and stabilised. Finally, the stages of labour within a project are clearly punctuated and demarcated by the issuing of collections of specific types of drawings to certain recipients, including clients, consultants, planning and development authorities, and builders.

Secondly, the drawing is especially significant as that with which architectural labour is primarily mediated beyond the walls of the architectural office. Simply put, architects are not on site pouring concrete and hoisting rafters; if they act on the production of built artefacts it is predominantly via the mediation of drawing. The system of conventions and ‘precision’ of these artefacts (along with the competencies of those on the building site) provides for the architect’s absence; they needn’t be (at all times) on-site and directing work or providing interpretations of these inscriptions. Though, these are not the sole means of mediation, specifications (terse written documents that accompany drawings) also leave the office, and architects also make calls, emails, and visits to sites as negotiations continue. However, these, again, notably centre on and reference drawings.

Finally, efforts to define the figure of the ‘architect’ wrought during the Italian renaissance were bound to the production of drawings and its capacity to set the architect of from the labour occurring on the building site, allowing them to act at a distance, and defining them and their ‘intellectual’ activities as distinct (Forty 2004b, p.30). Indeed, to some builders of the early 19<sup>th</sup> century, it was merely the ability to draw that “set [the architect] apart from his humbler colleagues” (Upton 1984, p.118) and on this basis that some, such as Samuel McIntire and Asher Benjamin (Reiff 2000), who could raise their skill in drawing could retire from the building site to the title of ‘architect’. Similarly, the first step that a craftsman aspiring to architecture could take in the early twentieth century was indoctrination into the practice of drawing, perhaps via tuition in a mechanics institute or vocational school, and thereby secure an entry level position in an architectural office (Johnston 2005). The drawing’s demarcating status continues into the present (Brown et al. 2010, p.535),

though more frequently incorporating familiarity with CAD programs rather than skills with pen and rule.

It is in this context that the 'drawing congruent' character of the architectural handbook, and its 'content' of the user, must be understood. A concern with the accomplishment of knowing the user within architectural practice renders this status of drawings and drawing practices of immediate significance, given that the predominance of such drawing practices (or, their position in the 'chain' of action in architectural projects) entails that knowing action, to be effectual 'architecturally', need to (most likely) be translated, by some means or other and at some point, into acts of drawing.

At this point, it is pertinent to draw a distinction between there being 'knowing of the user' transpiring within an architectural office or an architectural project and there being '*architectural* knowing of the user' (for want of a better phrase). The later being action that translates into built artefact, in which case, as indicated, translation into the terms and form of the drawing is a primary imperative. In this frame, there is a gulf between an utterance like "people don't like not having their own space" being made at a meeting table and the movement of bricks and mortar. The connection between them is not a given or necessary in such a way that simply the occurrence of the former within the walls of an architectural office would justify claiming that the user is there-by 'known' in the course of or incorporated into architectural production any more than a market report playing on the radio near the drawing board can be said to. Simply being able to 'talk-the-talk' is not sufficient (Duguid 2005, p.113). Thus, actions, or material like 'raw research data', are only efficacious (relatively) within extant assemblages of architectural practice when accompanied by the capacity for them to be translated into drawing or if, otherwise, presented in the project already translated in a form "more relevant to designers" (Fawcett 1996, p.13), which is to say, in the language of drawing or in a form practitioners are more adept at translating. Thus, it is significant that matters of the user are already 'within the handbook' cast in terms of drawing.

Given this, an important consideration is the specific place that the use of the handbook takes in this spatial-temporal array of practices that constitute architectural labour: predictably, it is embedded within practices of drawing. The following section will provide a picture of this position of the handbook.

#### 4.10 BOOKS 'AT-HAND' IN DRAWING

A characteristic of the handbook that is somewhat mundane, and obvious or even tautological given the definition proposed, is also an especially important feature of the knowing assemblage of which they are a part: these artefacts are situated within the flow of architectural practice itself in the spatial domain of architectural offices, '*at-hand*', ready and available for the architect when they encounter their "daily problems" (Ramsey and Sleeper, cited in Johnston 2008, p.146). *Architects' Data* and *AGS* are to be found, dog-eared and annotated, inhabiting desks, and open at drawing boards, as one of the elements manifestly embroiled in architectural labour. As Johnson (2000, p.xv; see also Walker 1951, p.vii) attests, "[e]very architect loves it, wears it out, and *keeps it within arm's length*" (emphasis added). These handbooks positions are evident in titles considered for *AGS*, including "Thumbtack Data for Architects" (Ramsey and Sleeper, cited in Johnston 2008, p.146) - thumbtacks being used to fix drawings to drawing boards. To clarify the significance of this proposition it is useful to, first, turn to a comparison (albeit in broad brush strokes) of the 'handbook' with what might be called a 'typically-used' book (remembering it is by *use* that the 'handbook' is defined).

In so far as the composition of knowing is concerned, the operation of the 'typically-used' book forms the ground for the image of texts as a kind of intermediary between 'knowing practitioners', and their typical interpretation as 'vessels' containing some knowledge 'content'. Despite potentially bearing on architectural production, it figures in practices that are otherwise adjacent or removed from architectural labour. The scene is, rather, one of an undistracted, reflective reader, quiet with book in hand. Principally, they are part of practices focused on 'practitioner production': simply, learning practices. The core of such practices is the 'communion' of reader and text itself, not the production of architecture. The event that occurs is an apparent transfer of the material of the book, 're-inscribed' into the form of the dispositions and competencies of the, now learned, reader. Thus, these artefacts, though physically absent from the performance of architectural labour nevertheless may come to bear on practice via the mediation of the learned, 'knowledgeable' practitioner. This is rather distinct from the operation of the handbook's more-or-less 'direct' bearing on architectural labour.

Rather than *producing architects*, the handbook is, instead, embroiled in *producing architecture*, alongside architects and the host of other actors. That is, the handbook is not used to (that is, necessarily<sup>9</sup>) produce 'a practitioner that knows' that "three people next to each other require 1700mm", but to elicit the action of inscribing the graphical equivalent of "1700mm". This divergence in the use of the handbook is immediately evident in how odd it would be to see *Architects' Data* or *AGS* simply being read cover to cover ("Why are you reading *that?*" might be expected). Rather, a predictable scene of events would be one of seeking out the handbook (this, itself, punctuating and embedded within a longer stream of action), locating an appropriate portion of the text, before returning to the previous stream of action where-in an action prescribed is then performed.

However, the handbook isn't a part of simply any of the practices of producing architecture; specifically, they are embedded within *producing drawings*. Within architectural offices, they are to be found in the throws of action at the drawing board (or computer), embroiled in "the rush of getting out drawings" (early reviewer cited in Johnston 2008, p.179). When things are done and knowing transpires with the handbook it is primarily through acts of drawing.<sup>10</sup> Most significantly, the operation of this knowing assemblage wrought about the handbook is to be identified, and distinguished from its absence, by virtue of the addition of an artefact to the corpus of elements already present at the drawing board - this being, obviously, the handbook itself. The reason this otherwise absent artefact being added to the host of characters at drawing boards (architects but also drawings, paper, pens, tee squares, scale rules, sketches, meeting notes, computers, keyboards, mice, software, emails, and more) is so important for the composition of this knowing assemblage is because, in this addition, the 'work' that takes place at drawing boards is consequently distributed

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<sup>9</sup> The caveat 'necessarily' is required as it is certainly not inconceivable, or even unlikely, that an architectural practitioner may very well, after several times of having to look up, then a few of having to 'double-check', the required hallway width for two people passing one another, no longer require the employment of the handbook. That is, such is the frequency of the need to enact this, or some other, knowledge that they are able to enact this themselves, without the handbook. Indeed, this might be the case for numerous portions of content within the handbook. The important point, however, is that such a state of affairs is not necessitated by the operation of the handbook itself.

<sup>10</sup> This is not to say that one would not ever find *Architects' Data* or *AGS* taking part in any other practice in an architectural office. For instance, it would not be odd for it to be employed during a meeting in the same way that Ewenstein & Whyte (2009, p.24) describe an engineer consulting a copy of *Economic Concrete Frame Elements*, "to get further information on requirements for beam depth, deflection, etc.", in order to move the discussion in a meeting along. However, in this instance, it is worth noting the centrality that drawings maintain even within meetings and conversations.



amongst a different and greater number of elements in practice. This also entails a (re)definition of these elements, the relations amongst them, and the competencies they bring to orchestrations of knowing the user.

#### **4.11 THE ARCHITECT-AS-TRANSCRIBER**

As practices vary across space and time, the elements of which they are composed and the character of these elements shift and change, reconfiguring other elements and the total composition, the relations between them, and the manner in which action is distributed amongst them. The shifting location of competencies amongst entities, for instance, is neatly illustrated by Watson & Shove's (2008, pp.77–78) example of door painting. Where previously the practice of repainting a door required a fairly complex set of competencies from practitioners (removing the door from the frame, painting panels in the right sequence, and in the correct manner and time such that the coat was even), with the development of fast-drying non-drip water paints these competencies shift from the painter to the technology of the paint itself.

Examining the elements of this knowing assemblage and the distribution of knowing action amongst them, the first point to note is that, for the most part, the elements of drawing practice remain more-or-less the same, compared to where the handbook is absent). That is, no new materials (apart, of course, from the handbook itself) are added to the practice, relatively speaking,<sup>11</sup> and those that remain (paper, pens, scale rules, and so on) persist virtually unchanged. That which *is* significantly redefined is that all-too-salient element, 'the architect', and the contours of this definition are visible in the character of the handbook.

In this reconfiguration of practice, and the knowing assemblage composed within, there is evidently 'less' required of the architect in 'knowing the user'. In the language of actor-network theory, work has been 'delegated' to the handbook, and, as Latour (1994, p.229) suggests, "every time you want to know what a non-human does, simply imagine what other humans or other non- humans would have to do

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<sup>11</sup> Compared to a redefinition of elements in drawing practice that centres around the addition of a much more dramatic novel element (though, in this case, not specifically related to knowing) such as, for instance, CAD software, entailing a host of other material elements, 'stuff', including computers, keypads, mice, wiring, printers, technical support staff, and so on.

were this character not present". In this delegation to the handbook, which now sits ready for use on the shelf or temporarily weighing down paper, the architect, most notably, no longer needs to be able to retain or recall the 'content' otherwise inscribed and residing in the handbook that they may knowingly act on the basis of. This capacity is, instead, replaced by the attunement of the handbook's capacity to store this material with the architect's capacity to locate it within the handbook and to identify opportunities in the flow of work when such content is required. Nor are architects required to have the ability to meet the imperative to translate this content into the form of acts of drawing because, as illustrated, the user is bound to matters of architecture in a form already translated into drawing, or in terms congruent with drawing, by the handbook. Instead, in the composition of this knowing assemblage wrought about the handbook, the capacities required of the architect are principally those concerned with the employment of the artefacts of drawing (whether of the pen and paper or mouse and computer screen type) and relocating drawings (whether appropriated with greater or lesser fidelity or originality, or copied more-or-less directly, perhaps simply with a sheet of trace or copy-pasting CAD details from digital editions) and drawing congruent prescriptions from the page to paper or screen. In sum, in this knowing assemblage, the architect is defined as, primarily, a faithful transcriber.

In this 'prescription', the particular distribution of competencies (Akrich & Latour 1994; Latour 1994) wrought in the assemblage of the handbook, a significant portion of the 'work' of knowing is delegated to the handbook. Indeed, the belief that such a delegation was *necessary*, given that the "modern store of factual matter is too complex and extensive" (Ackerman 1932, p.v) for the lone capacities of the practitioner, grounded their justification. Consequently the agency of the architect-and-book can be understood to displace the alternate agency that might otherwise figure as the 'lone architect', where comparable action of 'knowing the user' apparently emanates from (and knowledge 'resides in') an individual knowing subject. It may also, however, be seen to displace the extended knower that resides in the collective chatter of the drafting room or the 'architect-researcher' making quick excursions into the world (maybe with tape measure in hand) to collect 'data'.

## 4.12 MOBILE ASSEMBLAGES

It is now appropriate to reframe this in terms of the aspect with which this chapter was prefaced - mobility. To reiterate, the mobility of knowing assemblages is to be addressed in terms of the mobility of their constituent elements. Knowing (and practices), as situated performance, does not travel. Its dispersion across space and time and colonisation of domains of social life is via the movement of their components and the maintenance of their inter-linkages in the moments of recurrent performance (Shove, Pantzar & Watson 2012).

The obvious starting point regarding the mobility of this knowing assemblage is its most salient element, the handbook, and the fairly mobile character of this artefact itself. It is, relatively speaking, quite compact (though, maybe not for a book), durable, stable, and (characteristic of printed matter) easily reproducible. This is, however, a simple, 'logistical' sense of mobility. The affordances of this artefact in being able to be transported over space (especially compared to, say, a person) are, of course, important. However, it is a more nuanced picture of mobility that is required, and this entails the conditions of reception of this artefact in potential sites of knowing.

A valuable image of the movement of knowledge is one of 'abstraction-reversal' (Shove, Pantzar & Watson 2012, p.48) or 'codification-decoding' (Duguid 2005, p.113) where situated knowing is transformed into matter that circulates. The correlate to this is that such 'abstracted' knowing must, then, be 'unpacked' at its site of reception. This image and the connotations of its terminology, of knowing in an original state undergoing a process of transformation, movement, then another process of 'reversal' (requiring appropriate know-how related to this process at the site of reception) to return it to or reproduce an original state, may be deceptive and is, at least, incomplete. This is not to say that this does not happen but, in so far as 'mobility' is concerned, it is not the only story.

Take, for example, what one might think of as a paradigm case of codification, the recipe-book. Here, a cook's know-how in, say, baking a cake, is translated into the form of relatively succinct discursive material, in an artefact that is reproducible and relatively mobile. This, however, is a case where the process is not merely one of 'abstraction-reversal' where an original mode of 'knowing how to bake a cake' is reproduced identically in a different site. This is because one does not necessarily acquire a recipe-book to read it and learn it 'by-heart'. Instead, it is just as

common (perhaps more common) that it sits dormant on a bookshelf until the occasion arises for baking a cake, when it is then brought into the practice of baking itself, and the baker-book perform in tandem.

Though one might, perhaps over time and frequent use, be able to then carry out this performance without the recipe-book, it is characteristic of the recipe-book that one needn't. In other words, this is not a process of reproducing knowing via a process of 'abstraction-reversal' but of constructing a novel mode of knowing entirely, of translating an original mode of knowing into a variant that involves a different set of elements, notably the guiding instructions of the recipe, the know-how on the part of the baker to read a recipe (not simply comprehension but also, for example, knowing to skim through the text first, and follow the steps in sequence), along with other capacities not codified in the recipe-book but which are assumed of the recipient (sifting flour, for example). The purpose of this short illustration is to emphasise that the movement of knowing that the handbook is part of is not of this 'abstraction-reversal' type, but of the dispersion of requisite components. The question of 'reception' is, then, not one of having the appropriate capacities to 'reverse' this artefact, the handbook, back into some other form of original knowing, but of ensuring the presence of the requisite components of the knowing assemblage with which it may compose knowing the user.

Any knowing assemblage incorporating so-called 'codified' elements require those competencies that render them utilizable in action. Though codification can be remarkably powerful, giving "any competent users of a language access to knowledge codified in that language", and especially mobile (logistically), those other elements, competencies, on which it relies for the composition of knowing are often relatively immobile, or 'sticky' (Duguid 2005, p.114). Hence, the significance of 'codified' material that draws upon extant distributions of capacities, that is, where "practice precedes it" (p.113). Such is the significance of the 'drawing congruent' character of the handbook. The distribution of competencies involved in the performance of this knowing assemblage delegates work to the handbook and its affordances in such a way that the requisite competencies on the part of the architectural practitioner are, more-or-less, those native to and shared with the practice of drawing. This, in combination with the fact that drawing is a core practice to the architectural project and, thus, well distributed across the dispersed sites of architectural labour, means that the components for the composition of this knowing assemblage that complement the ('logistically' mobile) handbook itself, are well

dispersed and, consequently, this mode of knowing the user is rendered mobile and is successfully accomplished and reproduced in architectural practice. It is mobile relative to not only, say, some comparable mode of knowing where the handbook is absent and its 'work' delegated to the practitioner (where they are solely responsible for remembering, recalling, and translating this material into drawing), but also relative to an iteration of the handbook where the 'content' is not pre-translated into the space of drawing and this task is left to other additional (and perhaps not as well distributed) elements in the performance of knowing.

#### **4.15 CONCLUDING REMARKS**

In this chapter, I suggest that the knowing assemblage that is wrought about the handbook achieves a mobility grounded in specific distributions of competencies (particularly the delegation of labour to more logistically mobile artefacts – the handbook) in tandem with prescribed elements being predominantly native to core drawing practices (notably, the drawing competencies the 'architect-as-transcriber'), thereby utilizing extant and well dispersed potential sites of knowing within architectural labour and reconfiguring and embedding within these rather than establishing new practices entirely. Consequently, the distribution of components required for the composition of this knowing assemblage is ensured and provides the ground for the spatio-temporal dispersion and reproduction of successful accomplishments of knowing the user. This is reflected in the character of this knowing, in so far as this embedding necessitates a congruence with the realities of the site of reception, drawing practices, and the elements found there (to be drawn on in the composition of knowing assemblages). In this case, this manifests as the 'spatial' rendering of the user in the shift towards congruence with drawing.

To clarify, my suggestion is not that architects, nor the authors of either of these texts,<sup>12</sup> are a kind of graphical dope only capable of thinking in, translating, or appropriating a certain type of graphical content, contrary to the implications of

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<sup>12</sup> Neufert, in fact, made investigations into somewhat less than drawing congruent qualities of users; his 1942 *Der Mieter hat das Wort* study surveyed 'dwelling wishes' of Berliners (Kuchenbuch 2016b, p.32). However, notably, the results were framed not primarily as a directive for architectural practice but, instead, what was to be influenced by it; the conclusion was that it revealed an "enormous educational challenge" (Kuchenbuch 2016b, p.32).

Banham's (1996, p.298) assertion that architects are “unable to think without drawing”. If one takes a cursory glance through architectural projects or writing, it is evident that the sources that architects draw from are diverse; architects are adept appropriators and translators. However, what is particularly significant about this graphically centred knowing is its mobility and stability beyond *any particular* centre (i.e. the appropriations alluded to are usually fairly idiosyncratic, local, and particular to certain projects and people).

An expectable contention might be that the identified ‘spatial’ aspects of the user are simply the most ‘architectural’ aspects of this object, that not everything or every aspect of a thing is architecturally relevant, and these happen to be the most architecturally relevant aspects and, thus, are prevalent in these texts. My conjecture here is that, rather, this is to mistake a question for an answer. Instead, I propose that the reason for these being apparently ‘architectural’ characteristics requires explanation (that is, relevance is no inherent characteristic), and the explanation I offer is that they are bound to the contingent complex of practice through which architectural labour transpires, particularly (but not limited to) the centrality of drawing to this nexus and the realities of composing this particular knowing assemblage in which the handbook takes part.

Suggesting that the realities of the practice complex of architectural labour bears on the shape of the ‘knowing the user’ orchestrated with the handbook immediately engenders the question of by what mechanism this occurs. This is clearly a matter of authorship, and the answer is bound to the position of the authors, Neufert (later the Neufert Foundation) and Ramsey and Sleeper (later the AIA), within this practice complex. This is to say that, as both experienced practitioners and educators in prominent educational institutions, they were themselves elements of this complex and, thus, bearers of the competencies and dispositions of their position defined as an element there-of. These embodiments of the practice complex there-by mediate this reality in the shaping of the handbook and, thus, manifests in the character of the semiotic content assembled on the user and the manner it is bound to matters of architecture and built form.

Obviously, we can no longer visit the offices of these authors to paint a finer picture of how they wrote these texts. However, some material that recorded this process, indicates the manner in which, for instance, Ramsey and Sleeper filtered and translated existing documents into forms of a more distilled and graphic (drawing congruent) character (Johnston 2008, pp.160, 176). Of particular significance is that

these were texts that were 'assembled', in many cases resembling an act of bricolage rather than invention or creation. It is in this manner that, again, the extant architecture practice complex can be seen to bear on the shape of these artefacts. That is, these authors, in accumulating material on the user, did not have simply any infinite range select for inclusion but, rather, drew upon material (texts, inscriptions, etc.) that were embedded and circulated within the network of practice (by one means or another), with those most prominent and numerous being, predictably, those most generally congruent with this network.

This is not to say that it was solely the realities of the status of drawing for which Neufert or Ramsey and Sleeper were the mediator in the authorship of their books, or, in other words, to position this as the sole determinate of the shape of these texts and of the user within them. For instance, the project of standardization is equally important, and those same 'spatial' aspects of the user, particularly their quantifiable character, are similarly significant in their accordance with standardization. However, the point here is to identify the place of drawing practices as one particular, and important, determinant regarding the mobility and success of this mode of knowing the user.

# NOT-QUITE-ARCHITECTURAL KNOWING

As yet, the account I have provided of this knowing assemblage, in which handbooks figure, has only dealt with its material elements (things, such as books, people, and paper) and competencies (noting their shifts and distribution). However, also wrought in this assemblage, and equally necessary for the accomplishment of knowing and its reproduction, is a host of meanings ascribed to the use of the handbook. This chapter focuses on a specific set of meanings, those that position the use of the handbook as of a 'secondary' kind of labour and, I posit, engenders its stability (unproblematic and uncontentious status) within broader structures of significance - a 'schism' of architectural labour demarcated by the agency of the architect. Furthermore, I propose that this broader schism itself provides for a more general stability of this knowing assemblage, averting an otherwise problematic status of this agency of the architect-and-book relative to projects of closure within the practice complex of architecture. To elucidate this, I turn to the longer history of the handbook genre and this knowing assemblage and its entanglement in the emergence of this schism. The previous chapter made a provisional bracketing of the history of this knowing assemblage in an effort to provide an overview of the manner of its composition. The current chapter instead seeks to draw out its historicity.

The consideration of this longer history of 'handbooks' and the agency of architect-and-book will be provided in the second part of this chapter. It begins, however, with an examination of the results of discourse analysis that identify the characteristics of *Architects' Data* and *AGS* (along with additional contemporary handbooks) that manifest the specific ascriptions of meaning that situate the handbooks within and reproduce the structures of significance in which architectural labour transpires.

## 5.1 DISCOURSE ANALYSIS PROCESSES

The germ for the frame employed in the examination of the historicity of the knowing assemblage wrought about the handbook emerged from an initial investigation I made to identify the kinds of meaning that were orchestrated in the accomplishment of knowing the user and knowing generally. This entailed, firstly, examining the kinds of meaning ascribed to the handbook and its use and, further,



broader construals of architectural labour and the figure of the architect. It was through this process that I identified the discursive reproduction of a particular reality of architectural labour as a potentially fruitful focus for examining how elements of meaning were vital to the accomplishment of knowing involving the handbook.

When analysing the meaning and significance of the use of a particular discursive artefact there is a somewhat obvious place to start. Where-as other artefacts, say, a hammer, may, on their own, be relatively 'mute' on the topic of the significance of their use, discursive artefacts may be comparatively up front on the issue. They are (or can be) themselves a site for the discursive negotiation of their own significance. This is, indeed, the case for the handbooks analysed, and is where the discourse analysis I undertook began.

This task necessitated a reorientation towards the handbooks in the form of analysis that might more appropriately be labelled discourse analysis. That is, to reframe the handbooks as *text*, in the specific sense of a discursive act, as an instance of 'language-in-use' (Fairclough 2003; Gee 2011). In this was entailed a refocus towards the particular linguistic means employed to construe the world and the world thus construed or constructed in and with this discursive act. This is stated relative to the textual analysis, described as 'content analysis', outlined in chapter four. Though, as Prior (2008) identifies, any strict division between these two modes of analysis becomes difficult in the thick of the reality of texts and analysis.<sup>13</sup>

The mode of discourse analysis employed drew on the understanding of language (and resources for apprehending linguistic features) offered by Halliday's Systemic Functional Linguistics (SFL) (Halliday & Matthiessen 2014). Fairclough (2003) and Gee's (2011) directives on discourse analysis (underpinned by SFL) were the touchstone for the work undertaken. This orientation to text is noted for its congruity with understandings of sociality that emphasis the primacy of practices (Nicolini 2012, p.199). Though this chapter deals with the discursive content of the handbook and its history somewhat separately, the research process itself was, as Gee (2011) suggests, one of an oscillation between text and context.

This task also entailed a focus on particular portions of these volumes. Along with handbooks being a site for the discursive negotiation of their own significance,

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<sup>13</sup> This is especially the case given this 'content' being of interest, and specifically framed, in its embroilment in action.

analysis is further aided by the fact that such negotiations are concentrated in particular portions of these texts, those introductory and prefacing chapters and general front matter that serve this very purpose. Thus, the first task was to compile such sections for analysis.

As *Architects' Data* and *AGS* are long and ongoing publishing projects, their numerous editions provided scope for the analysis to extend to handbook-use-construing sections of earlier editions. On the results of initial discourse analysis I also decided to extend the analysis to include further modern handbooks. Though, this additionally raised the question of exactly *which* other handbooks. Firstly, being 'exhaustive' was not tenable, not for the number of texts but for the fuzziness of the boundaries of the genre. As previously outlined, this genre of texts is defined, in the context of this research, as those that are to be found 'at-hand' in the event of architectural labour itself. Most importantly, for the present discussion, is the 'fuzziness' of this definition, given that it is grounded in the kind of use to which an artefact is put rather than the kind of content within it; one text may be 'handbook' to one user, or at one point in time, and not to another. Hence, an 'exhaustive' study would be problematic if not untenable.

The texts included were, thus, a sample of what might be considered 'handbooks'. The criteria of selection were, roughly, three-fold. Firstly, a number were selected on the basis of comparable commercial success to *Architects' Data* and *AGS*. These were those with similarly extensive publishing histories, numbers of editions, sales figures, and references within the world of architecture and architectural discourse (including emerging from established and popular architecture periodicals). *Time-Saver Standards*, *The Metric Handbook*, and *Planning; the Architect's Handbook* were, for example, included on this basis. Secondly, the 'everyday-ness' or range and applicability of content served as a criterion. That is, books which, in their espoused breadth and character of content, bear on architectural labour with a particular frequency, in contrast to, say, handbooks focused on 'libraries' or 'timber construction' which are, thus, employed on the occasion of certain projects or when certain materials are utilized. This criterion was established on the basis of a similarity to the primary texts, but also because this characteristic (potentially bearing on and embroiled in a extensive range of architectural labour) was relevant to the structures of significance and meanings identified as of particular interest (see §5.3). Finally, the simple pragmatic criterion of physical availability made for an effective means of delimiting a corpus of texts.

Availability in accessible libraries partially determined the titles and editions included in the discourse analysis undertaken. In total, 45 books were analysed.<sup>14</sup>

## 5.2 THE DISCURSIVE REPRODUCTION OF A 'SCHISM' OF LABOUR

Having compiled the sections from these handbooks, I distilled them further by extracting material that addressed the use of the handbook, the activity of architectural labour, or the figure of the architect. Within this material I examined common lexical families that were bound to the handbook and its use. Manifest in these segments of text where the significance of the handbook and its use is construed is a commonly recurring family of ascriptions. Though 'necessary', 'indispensable', or 'essential', and 'exhaustive' or 'comprehensive' in its operation, providing a 'full range' of material applicable to 'any project' and 'all building types and sizes', it is also merely a 'first step' or 'approximation', a 'starting point', or a 'foundation *only*', and just the 'elements', 'fundamentals', 'buildings blocks', of a 'general', 'basic', and 'reduced' character. Such characterisations of the handbooks and their use are consistent in the titles sampled.<sup>15</sup> From this position, I identified a recurrent feature particularly relevant to understanding the accomplishment of knowing the user with handbooks: an underlying construal of architectural labour that provides the context in which these ascriptions bound to the handbook and its use

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<sup>14</sup> The list of books included in the analysis were: *Architect's Data* in its 4<sup>th</sup> (Neufert & Neufert 2012), 3<sup>rd</sup> (Neufert & Neufert 2000), 2<sup>nd</sup> (Neufert 1980), and 1<sup>st</sup> (Neufert 1970) editions; *Architectural Graphic Standards* in its 12<sup>th</sup> (American Institute of Architects 2016), 11<sup>th</sup> (American Institute of Architects 2007), 10<sup>th</sup> (Hoke Jr. 2000), 9<sup>th</sup> (Hoke Jr. 1994), 8<sup>th</sup> (Hoke Jr. 1988), 7<sup>th</sup> (Packard 1981), 5<sup>th</sup> (Ramsey & Sleeper 1956), 4<sup>th</sup> (Ramsey & Sleeper 1951), and 1<sup>st</sup> (Ramsey & Sleeper 1932) editions; *Metric Handbook* in its 5<sup>th</sup> (Buxton 2015), 3<sup>rd</sup> (Littlefield 2008), 2<sup>nd</sup> (Adler 1999), 1<sup>st</sup> (Tutt & Adler 1979) editions, and its 3<sup>rd</sup> (Sliwa & Fairweather 1970) edition under its *AJ Metric Handbook* title; *Time Saver Standards* in its 7<sup>th</sup> (Watson, Crosbie & Callender 1997), 6<sup>th</sup> (Callender 1982), 5<sup>th</sup> (Callender 1974), 4<sup>th</sup> (Callender 1966), and 3<sup>rd</sup> (Architectural Record 1954) editions, and 4<sup>th</sup> (De Chiara & Crosbie 2001), 3<sup>rd</sup> (De Chiara & Callender 1990), 2<sup>nd</sup> (De Chiara & Callender 1980), and 1<sup>st</sup> (De Chiara & Callender 1973) editions of *Time Saver Standards for Building Types*; *The Architect's Guide* (Rogers 1877) in its 1<sup>st</sup> edition; *The Architects and Builders Handbook* in its 18<sup>th</sup> (Kidder & Parker 1947), 17<sup>th</sup> (Kidder & Nolan 1921), 15<sup>th</sup> (Kidder 1908), and 14<sup>th</sup> (Kidder 1905) editions; *Details of Building Construction* in its 4<sup>th</sup> (Martin 1914), 3<sup>rd</sup> (Martin 1908), and 1<sup>st</sup> (Martin 1899) editions; *Planning* (Mills 1985) in its 10<sup>th</sup> edition; *The Architect's Portable Handbook* in its 4<sup>th</sup> (Guthrie 2010) and 3<sup>rd</sup> (Guthrie 2003) editions; *The Architect's Studio Companion* in its 5<sup>th</sup> (Allen & Iano 2012), 4<sup>th</sup> (Allen & Iano 2007), and 3<sup>rd</sup> (Allen & Iano 2002) editions; *Architect's Pocket Book* in its 5<sup>th</sup> (Hetreed, Ross & Baden-Powell 2017), 4<sup>th</sup> (Baden-Powell, Hetreed & Ross 2011), and 2<sup>nd</sup> (Baden-Powell 2001) editions; *The Architects' Handbook* (Pickard 2002) in its 1<sup>st</sup> edition; and *Materials, Structures, and Standards* (McMorrough 2006) in its 1<sup>st</sup> edition.

<sup>15</sup> Reproduced, to varying extents, in all but one of the handbooks (*Architect's Pocket Book*).

make sense. The example extracts in Table 5 serve to illustrate the character of this material that is of interest.

<p><b>Architects' Data</b></p>	<p><i>In contrast to this, it is better just to hand students the elements of architecture, as is done in this Architects' Data, where I have attempted to reduce the building blocks of design to the essentials, to schematise and even to abstract in order to make imitation difficult and force students to produce form and content from within themselves. (Neufert &amp; Neufert 2012, p.xiii)</i></p>
	<p><i>If, however, as is intended here, creative architects are given only the tools, then this compels independent thinking so that they weave all the components of the current commission into their own imaginative and unified construction. (Neufert &amp; Neufert 2012, p.26)</i></p>
	<p><i>...the intention of saving the practising architect or designer the effort of these basic investigations, so that sufficient time and leisure can be devoted to the important creative aspects of the commission. (Neufert &amp; Neufert 2012, p.26)</i></p>
<p><b>AGS</b></p>	<p><i>...a resource so complete in its technical data that it let our creativity run free. (American Institute of Architects 2016, p.xv)</i></p>
	<p><i>To translate the facts most quickly for those accustomed to making and using drawings, we chose the graphic form of presentation, purposely devoid of all design in the decorative sense. (Ramsey &amp; Sleeper 1932 n.p.)</i></p>
<p><b>Architects' and Builders' Handbook</b></p>	<p><i>In this revision the author has had in view: 1st. A reference-book which should contain some information on every subject (except design) likely to come before an architect... (Kidder &amp; Parker 1947, p.xi)</i></p>
<p><b>The Architects' Handbook</b></p>	<p><i>...concentrates more on the overall character of buildings, and not on excessive detail or too much technical information. Although we have deliberately avoided comment on the design qualities of buildings, the fact that a building is included indicates that we consider it makes a positive design contribution. (Pickard 2002, p.vi)</i></p>
<p><b>Details of Building Construction</b></p>	<p><i>In the matter of design the author wishes to put in a disclaimer. Nothing is further from his intention than an attempt to dictate in a question of design, but it has been necessary to use design in order to show construction. (Martin 1914 n.p.)</i></p>
<p><b>Metric Handbook</b></p>	<p><i>Of course, the Metric Handbook does not seek to guide architects in terms of aesthetics and poetics; rather it seeks to provide them with the essentials from which to undertake a design. It is a foundation only. (Littlefield 2008 n.p.)</i></p>
<p><b>Planning</b></p>	<p><i>...it does not deal with the criteria for aesthetic or architectural solutions to design problems (Mills 1985 n.p.)</i></p>
<p><b>Time Saver Standards</b></p>	<p><i>...the material presented is primarily offered to give basic or general data for a particular building type... There is absolutely no attempt to dictate or even suggest aesthetic or definitive design solutions to any building type. The architectural designer must have complete freedom to exercise his or her creative abilities. With the handbook's solid functional basis, this goal can be achieved more successfully. (De Chiara &amp; Callender 1980, p.xv)</i></p>

**Table 5: Extracts illustrating the discursive reproduction of the 'schism' of architectural labour in handbooks**

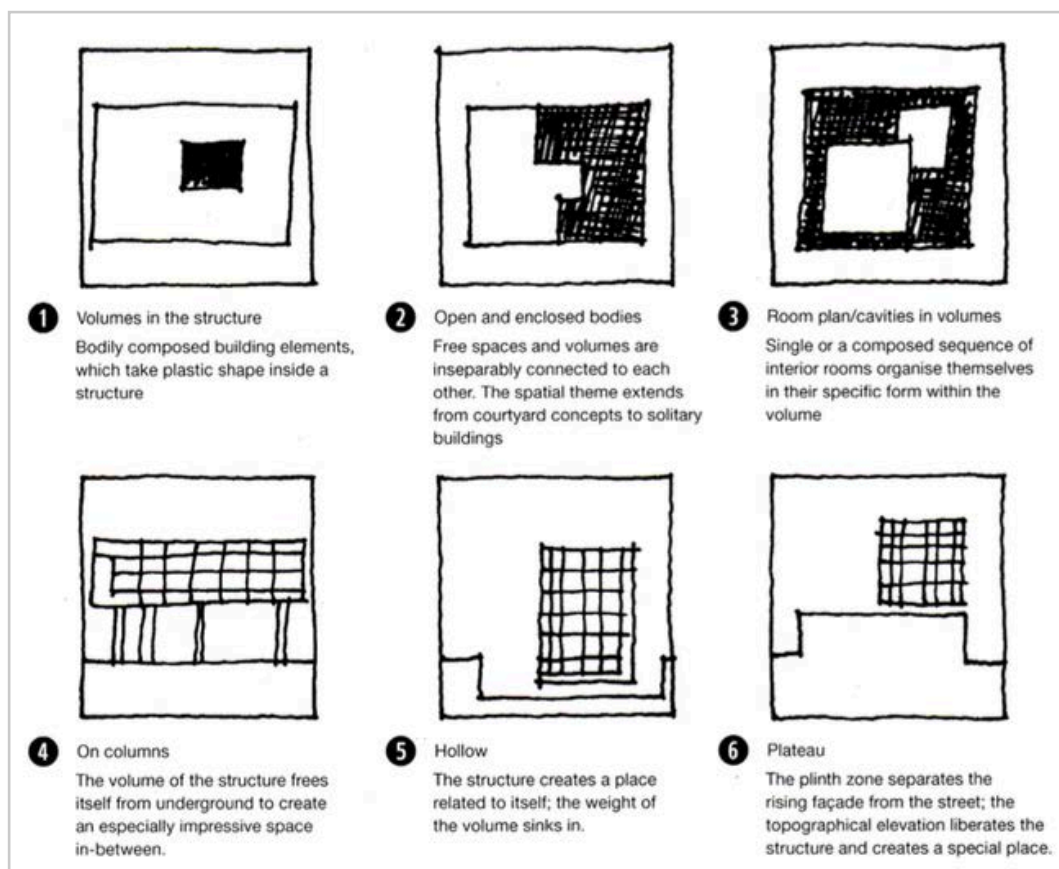
This broad construal of architectural labour is what, in this thesis, I refer to as the 'schism' of architectural labour, where, simply, this activity is understood to be divisible, or generally of two kinds or portions. One, relative to the other, is preliminary, subsidiary, necessary though basic, facilitating but incomplete, and even potentially obstructing (though, to be ameliorated by the handbook). There is a clear hierarchical relation between a segment of activity that is auxiliary, supporting or serving, and generally lesser than an otherwise privileged and served, more important, more essential (in the sense of 'of the essence of'), or simply *more architectural*. Importantly, within this schism of 'primary' and 'secondary' activities, the handbook and its use are firmly positioned as 'secondary'.

An especially important part of this schism is the specific demarcating criterion underlying this division. This demarcation is grounded in defining as 'primary', most *architectural*, those activities in which the agency of the architect is most predominantly and manifestly exerted. These are those 'creative' or 'expressive' capacities and acts intertwined with 'ideas', 'imagination', 'reasoning' and other goings on 'in the mind' or generally 'within' the figure of the architect and manifesting in the core of 'creative work' or something called 'design', where often those most 'aesthetic' and 'poetic' aspects of the project emerge. In this, the architect works as a 'free' individual, 'independent', and in 'their own way', though 'assisted' and 'provided' for by the handbook so that they may 'save time' by availing themselves of the necessary evil of 'secondary' labour to be able to focus on the 'primary' activities in which their creativity is expressed.

This schism is evident in the extracts provided above, though, notably, at no point in the texts is this division of architectural labour explicitly asserted; a proposition to the effect of "architectural labour has two portions; a more 'essential' and 'architectural' portion, and a necessary but otherwise 'secondary' or 'auxiliary' portion (of which this handbook is part)" is never made. This means of construal of this reality, as implicit behind other assertions, is of particular significance in so far as it confers an air of evidentially, given-ness, uncontentious-ness, and incontestability (Fairclough 1992, pp.120–121).

Again, these are eminently graphic texts and, indeed, the construal of this schism is multimodal (Iedema 2003). Of particular interest is the variance in graphical mode employed in the construal of these two domains of activity. Given these handbooks are of, and primarily concerned with, this 'secondary' domain, they, expectedly, address this 'primary' activity minimally. Of note, however, is the brief

section on “Design” included in the current forth edition of *Architects’ Data* (Neufert & Neufert 2012, pp.42–45). Here, a single set of fifteen drawings address ‘design’ (accompanying an occasionally florid description by Neufert on the design process and its ‘birth pains’) and are rendered in a free-hand sketch style (see Figure 8). These are notably distinct from the otherwise precise and technically drafted figures that fill the other sections of *Architects’ Data*, there-by articulating a distinction between these two domains of ‘primary’ and ‘secondary’ activities. In these apparently ‘free-hand’ images is the evocation of a manifest ‘author’ wielding the pen. In addition to clearly coming from someone’s hand, relative to the other figures in the text, the graphical mode of this small set of drawings are also closer to the mythical ‘back-of-napkin’ sketch of the master architect or fervently produced *esquisse* fashioned from the imagination in solitude (Draper 2000) that so typifies, and are idolised as, manifestations of the creative architectural act and expressions of genius.



**Figure 7: “Volumes in the structure”, “Open and enclosed bodies”, “Room plan/cavities in volumes”, “On columns”, “Hollow”, and “Plateau”, from *Architects’ Data* (Neufert & Neufert 2012, p.43). Reproduced with courtesy of Neufert-Stiftung, Germany.**

The prominence of this variance in graphical mode tied to distinct spheres of labour has been noted earlier in the description of the movement of drawn matter between members of architectural offices; sketches and 'mark-ups' from senior 'design' staff to junior members and draftsmen, who pass 'hard-line' technical drawings in the other direction (see §4.10).

Though other handbooks may not address 'design' and the 'primary' domain of architectural labour as explicitly as the variance in graphical mode over separate sections in *Architects' Data*, their figures still work otherwise to construe the significance of the architect's agency. The types of orthographic projections used within the handbooks are significant in this regard. Notably absent or minimal, as Emmons (2005, p.12) also identifies, are elevations and 'stylistic' or 'aesthetic' characteristics (broadly conceived). This is of particular significance in so far as the building façade (for which the elevation is the conventional mode of depiction) has frequently been (and is often today) understood as a principal 'canvas' for the expression of the creative capacities of the architect. Their absence in these texts can be understood as the aversion of impingement on the domain of the architect's agency. Similarly, the paired-back and, at times, almost diagrammatic qualities of the drawn matter avoid any potential appearances of prescribing particular 'stylistic' or 'aesthetic' qualities seen to be part of the 'primary' domain of architectural activity where the architect's agency is at work.

### **5.3 STABILITY WITHIN THE 'SCHISM' OF ARCHITECTURAL LABOUR**

Consequently, within this dyad, the handbook, its use, and the knowing assemblage within which it is orchestrated are necessarily relegated to 'secondary' status. The agency composed in this assemblage, manifestly distributed as it is amongst architect and book, clearly does not accord with a reality of architectural labour that situates the free exercise of the creative capacities of the architect at its core. The necessary and frequent undertaking of architectural labour that slights the prominence of the architect's agency, like knowing the user with the use of the handbook, is, thus, rendered unproblematic by the deceptively simple ascription that it is of a 'secondary', not quite as *architectural*, status and, thus, not problematic in this displacement of the agency figured as 'the architect'. The reproductions of these ascribed meanings and of this schism within the handbooks thus serve to ground the stability of the knowing assemblage of which they are part.

This discursive reproduction of the 'schism' of labour has partially figured in some of the exiting literature that has addressed contemporary handbooks. However, a focus on a more narrow "radical separation in architecture between functional fact and aesthetic expression", as Emmons & Mihalache (2013) posit, displaces a perspective that sees the schism within the handbooks as part of an historically broader and significant frame entailing more general divisions within architectural *labour* bound to the agency of the architect and with divided domains not necessarily figured as 'functional' or 'aesthetic'.<sup>16</sup> Additionally, Weckherlin (2007) identifies the apparent antagonism between the operation of the handbook and prevalent notions of 'authorship'. However, the mechanisms by which such an artefact is stabilised in practice are somewhat slighted, simply alluding to architects 'play[ing]-down' and "not mention[ing] its use" (2007, p.155).

The predominance of the architect's agency, which forms a key component of this schism of labour, is salient and pervasive enough that it has been well represented in literature on architecture. This is the myth of the 'hero' architect (Bentley 1999; Saint 1983). The 'genius' (Vesely 2004), engrossed in a sometimes obscure activity of 'design' while "alone, at the drawing board" (Cuff 1989, p.188), and whose "creative powers" are held aloft (Imrie & Street 2011, p.135). This 'design creativity' is, indeed, the "master value" of practice (Blau 1984, p.58). This goes hand-in-hand with the proudly-held image of the architect as 'artist' (Esherick 1984, p.27; Mallgrave 2015, p.9). This, and the "long-held, often false, assumption that arts is the product of individual creativity", being the basis for the importance of architect's conception of themselves as the 'sole author' of architecture (Hill 1998, p.22). How the hegemony of this agent, 'the architect', is reproduced and figures in the particular case of the knowing assemblage wrought about the 'handbook' is where this thesis contributes to this literature.

This schism within architectural labour mirrors and is closely intertwined<sup>17</sup> with the division made between architecture and other occupations and processes, less 'creative' (Cohen et al. 2005) but equally necessary for the production of buildings,

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<sup>16</sup> That is to say, the architect's agency, their 'genius', is equally liable to be exerted in 'functional' as well as 'aesthetic' matters. It is important not to conflate the exertion of agency, or the 'creative' or 'expressive', with the aesthetic. Though, it might be tempting to do given its connotations of the 'artistic', and there-by of the 'aesthetic'.

<sup>17</sup> 'Intertwined' is meant in the sense of the commonality in some of the sites and resources for the reproduction of these two realities.



though supposedly separate and distinct from architecture (between 'conception' and 'realisation'). This, what is often called architecture's 'autonomy' (in contrast to a reality of 'heteronomy', Larson 1993; see also Till 2009), has also drawn on figurations of the 'architect-as-artist' and (as will be indicated in the discussion to follow) shared a parallel history. The position taken here is, however, that the schism *within* the labour of 'architects' is distinguishable, and worthwhile distinguishing, from this.

The account provided in this chapter adds to the literature that has worked to describe these divisions between the "creative side" and the "nuts and bolts" (interviewee in Cohen et al. 2005, p.782) of architectural labour, as manifest in the architects' negotiation of 'residual matters' such as the adherence to rules and regulations and their perception as "ephemeral, even incidental, to the creative process of design" (or even in detrimental to it) (Imrie & Street 2011, p.20), the assignment of more "prosaic" matters to subordinate staff (Brown et al. 2010, p.353), or the architect's perennial complaint that they don't get to do enough 'design work' (Blau 1984; Cohen et al. 2005, p.783).

However, in addition to the stability wrought for the mode of knowing the user, and action ('doing architecture') generally, with the handbook via its ascription of 'secondary' status *within* this structure of the schism, it is the reproduction and continued presence of the schism itself which also underlies a more general stability and unproblematic status of this agency of architect-and-book. The conjecture I pursue in the analysis to follow, and that elicited and informed the investigation of the longer history of this knowing assemblage of the handbook, is that these construals made by the handbooks, of a schism of architectural labour demarcated by the agency of the architect, are not the reflection of some necessary, universal, or inherent characteristic of architectural labour but are, instead, instances of the discursive reproduction of a particular contingent, constructed, and historically emergent reality. I propose that this schism is the outcome of a history centring on the emergent possibilities for the appropriation of architectural labour, in which the broader genre of 'handbooks' itself played a significant role.

#### **5.4 THE 'ARCHI-TEXT'**

Turning to briefly examine this history, two points need to be noted. Firstly, the 'handbooks' in this view are a broader genre of texts than those so far discussed

under the name of 'contemporary' or 'modern' handbooks. The definition (a common 'at-hand' character) employed in this thesis brings a host of diverse texts under its umbrella, given a longer historical context these include so-called 'pattern-books', 'copy-books', 'books of the orders', and so on.

Secondly, the focus will shift (as, to an extent, it already has) from a predominant concern with that action describable as 'knowing the user'. Rather, the interest will be on action more broadly. Broader still than (though including) that action categorised as 'knowing', to consider how action in most general terms, 'doing architecture', is accomplished with 'handbooks'. Those ascriptions of meaning, attributions of agency, and general structures of significance in architectural practice, explored in the sections to follow, form part of the performances of both the more specific case of action, 'knowing the user', as well as the most general 'doing architecture'.

The history of interest here is not the history of the architectural handbook, it is the history of a specific agency, of a particular mode of 'doing architecture'. This is that agency, that 'knowing assemblage', manifestly distributed amongst practitioner and text.<sup>18</sup> Following Michael's (2000) suggestion, one might make the analytical move of figuring this agency as a kind of 'co(a)gent', for the purpose of tracing its trajectory, and employ the seemingly all-too-convenient hybrid term 'archi-text'. Important to note is the variation in the composition of agency brought under the umbrella of this term 'archi-text'. It, as illustrated below, is not simply the orchestration of book and 'architect-proper' in practice, but also subsumes those performances of 'architecture' that transpire in assemblages composed of, for example, landed gentry, builder, skilled craftsman, and book. The commonality underpinning this categorisation being, despite variations in the number or type of other entities embroiled in action, the presence of the book embedded within the performance of architectural labour. A comprehensive and in-depth historical account of this artefact and figuration of agency would easily take the length of a monograph.<sup>19</sup> Rather, this chapter just serves to indicate some of the contours of this

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<sup>18</sup> To clarify, this is not to limit the 'extents' or distributed-ness of this agency to these two figures (practitioner and book), but to note that it is amongst these two *that it is manifest* as distributed or extended.

<sup>19</sup> Indeed, something close to such a project is found in Reiff's *Houses from Books* (2000), and this work, along with the invaluable bibliographic and historical work of Archer (1985), Harris (1990), Hitchcock (1976), Park (1961), and Wittkower (1974), has greatly aided the historical picture sketched in this chapter.

history, intended to provide enough illustration to elaborate the broader thesis pursued.

## 5.5 DOING ARCHITECTURE WITH BOOKS

A viable site to stake out a beginning of this history is the emergence of those printed architectural books of the 16<sup>th</sup> century that followed the advent of the printing press in the 15<sup>th</sup>. At the hands of architects, Serlio's, Vignola's, Blum's, and Shute's books aided in disseminating the new architecture *all'antica* across Europe. Such texts, and their innumerable translations, reductions, and plagiarisations, along with the agency of the 'archi-text', only increased in the following centuries (for the situation in Britain, for example, see Harris 1990). What was *done* with these books, or what of architecture was rendered doable with them, varied. Some, 'books of the orders', provided, with increasing developments in espoused 'ease' of application (including systems of ratios or tabulated measurements, and also illustrated decorative elements to copy) a means by which, book at hand, the architect could be sure their work would accord with the inalienable fundamentals that were at the centre of the renaissance and were for centuries the "absolute criteria for design in architecture" (Harris 1990, p.23) – the 'orders'.<sup>20</sup> Alternately, they also served simply as repositories of designs (in varying modes of the time) that could, in whole or part and with varying fidelity, be translocated from page to drawing. Prints from the pages of Serlio or Palladio's books, or later 'archaeological' studies, reproduced in brick, stone, and timber abound across Britain, Europe, and the US (Reiff 2000). In some cases, the books themselves took on the role of the architect's drawing, referenced in specifications and contracts (Reiff 2000, p.50).

These book were not the emergence of an entirely novel agency; the embroilment of texts in the architectural labour had been established well prior (see n.24 below). However, they were most certainly the assembling and proliferation of a thoroughly renewed or revitalised iteration of this agency. The book, of course, became a radically different technology with the invention of the printing press. This

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<sup>20</sup> These being, roughly, a system of treating the "'column-and-superstructure' unit" (Summerson 1966, p.9) according to certain rules of proportion and ornamentation, articulated in five modes of the Tuscan, Doric, Ionic, Corinthian, and Composite (though, this number varies from a minimum three, Doric, Ionic, and Corinthian, to a host of numerous other supposedly invented or discovered orders).

history has been treated extensively (see, for example, Eisenstein 2005; Febvre & Martin 1976) and needn't be belaboured here. What does need to be emphasized is that this novel reality did not immediately precipitate the proliferation and veracity of this agency, bound to its establishment as a tenable and legitimate mode, nor its problematic status that emerged with this. These both emerged slowly, historically speaking.

Processes establishing the tenability and legitimacy of this mode by which one might 'do architecture', where the architectural book performed a central and salient role, included, firstly, the sheer volume of such books produced, in both number of items and titles. Increases in production were often tied to building booms, such as after the Great Fire of London, (Harris 1990, p.409) and such attempts to translate portions of architectural practice to the pages of texts served to enact and progressively ossify the notion that such a translation was both possible and legitimate.

A major site for establishing this legitimacy was, obviously, architects' adoption of these books as a commonplace artefact in practice. The reproduction and movement of ruins translated into inscriptions superseded the otherwise essential movement of bodies across Europe to sites of antiquity, and engendered a great demand for the printed book.<sup>21</sup> They provided an effective, indeed essential (Reiff 2000, p.5), means for those wishing to take up the new architecture *all'antica* (or, in later eras, the mode of the day). The manifest employment of handbooks in the work of architects of Inigo Jones' calibre (Reiff 2000, pp.11–13) serves to underscore its viability as a mode of practice, and one could assume recourse to books would be even more essential for "lesser lights" (Reiff 2000, p.15). Indeed, possessing books could be leveraged as assurance of the quality of architectural services, as is evidently so in the case of an architect from Williamsburg in 1777 advertising the fact that he has at his disposal imported "Books of Architect" (cited in

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<sup>21</sup> This is, of course, a simplification of the situation. It is not to say that the advent of the printed book suddenly grounded travels to the Mediterranean or other sites in Continental Europe to a halt. Practitioners, though they had this novel means of access to the moments of antiquity, still continued to add to this by travelling to various sites and witness these artefacts 'in the flesh', and compare them to those printed materials they had acquired (as in Inigo Jones' marginal notes on Palladio). Such travels did, however, take on a different character in the ensuing centuries, becoming, in many cases, a gentlemanly 'right of passage' rather than practical necessity (i.e. the 'Grand Tourists'); as Gwynn (1766, p.65) quips, "where is the necessity of this parade of going to Rome, is there a building, or even a fragment of a building in Greece or Italy, of which we have not accurate draughts and measures?"

Park 1961, pp.120–121). Towards the end of the 18<sup>th</sup> century, Chambers (1791, p.38) articulates the self-evidence of the viability, and potential benefit, of the use of books by dismissing the notion that one might judge a design method by the ease of remembrance when “it is easy to have recourse to figured drawings, or to prints”. That is, it is perfectly reasonable, even advisable, to rely on the affordances of artefacts to delegate, at least some, architectural labour.

However, also furthering the tenability of this mode of producing architecture were the successes of particular compositions of ‘archi-text’ where the figure of the ‘architect proper’ was notably absent. These included an emerging class of practitioners made of well-to-do amateurs, landed gentry, and dilettantes. These figures took up architectural work with the aid of a growing number of books, and by employing skilled craftsmen and contractors to fill in the ‘gaps’ in their competencies on the matters of building. Those able to afford the, initially, fairly expensive texts discussed them with, and lent them to, those more adept in construction (Reiff 2000, p.7).<sup>22</sup> The successes of such assemblages gradually accumulated from the mid 16<sup>th</sup> century onwards, such that when Gibbs, in 1728, offered his book to service those who “in the remote parts of the Country” could “find little or no assistance for Designs” (Gibbs 1728, p.i) this was not some novel invention but, rather, a well-established mode by which architecture was performed.

Additionally, the emergence of more affordable books in the early eighteenth century (Reiff 2000, p.21) established the ground for ‘architect-less’ iterations of the ‘archi-text’ incorporating figures like builders and craftsmen. This was of particular significance in so far as this iteration of the ‘archi-text’ was able to occupy a domain of architectural labour in the frontier of newly established colonies. Such assemblages wrought about the handbook provided for a situation in which its operation was, in some ways, ‘necessitated’ by the absence of ‘architects-proper’. Operating in these geographies as necessity nevertheless served to strengthen their tenability, particularly as they enabled the articulation of fledging cultural ambitions (for which the US is the paradigm example) (Kostof 1995).

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<sup>22</sup> Instances of such compositions include, in the late 16<sup>th</sup> century, John Thynne in Longleat assisted by craftsmen and his steward John Dodd, Sir William Cecil in tandem with mason Roger Ward and steward Peter Kemp (Wilton-Ely 2000, p.181) , and Sir Edward Pytts and his mason John Chaunce (Reiff 2000, p.7). These well-to-do practitioners also played an additional vital role in the production of the books on which this mode of practice was founded, as in the case of the Duke of Northumberland sending John Shute to Italy, there-by providing material for Shute’s treatise (Reiff 2000, p.7).

However, it is worth noting, that making any easy distinction between 'architect' and 'non-architect' at this point in the history of the profession (up until the mid to late 19<sup>th</sup> century at least) is shaky at best. The situation is rather, to use Johnston's (2008, p.60) term, a shifting "continuum" of diverse practitioners, including dilettantes, landowners, craftsmen, builder-designers, and so on, making claims to be undertaking 'architectural' work. It is this reality that is closely bound to and grounds the aforementioned tandem emergence of the 'problematic' status of the handbook and the agency of architect-and-book. I turn to outline this instability in the following sections.

## **5.6 PROBLEMATICALLY DISTRIBUTED AGENCIES**

As the agency of the 'archi-text' proliferated, contestations to the place of the handbook within architectural labour worked to establish its instability as a mode of performing architecture. The crux of this problematic status is evident in qualms like Gwynn's (1766, p.67) that "Almost every one now, who can but make shift to draw neat lines, and is furnished with a few books to borrow from, sets up for an architect, his productions are dignified with the term invention, and, with many, pass current as such", or Mylne's (Publicus 1760) mocking despair that "a carpenter can convert himself by the help of a Palladio Londinensis lying on his bench, into an architect". This reaction to the 'archi-text' is not limited to the 18<sup>th</sup> century when handbooks were especially prominent, however. Serlio's books, for instance, were denounced by Lomazzo (cited in Carpo 2001, p.117) who proclaimed that "truly Sebastiano Serlio has made more dog-catchers into architects than he has hairs in his beard." The point to be made, though, is that the increase in both the production of books and the production of architecture 'of the book' served to only intensify their 'problematic' status.

As indicated, this mode of 'doing architecture' entailed compositions that included characters orchestrated in practice other than the 'architect proper'. This was no accident; they were often explicitly addressed to "Gentlemen, as well as Masons, Carpenters, Joyners, Bricklayers, Plasterers, Painters, etc., and all others concern'd in the several Parts of Building in general" (Langley 1727), or those of "ordinary capacity" (Schuym 1687). These artefacts worked to, in part, define and provided a resource to enact architecture in such a manner that it opened its undertaking up to a broader range of practitioners, principally via delegation of labour

to the artefact. Whether one understands *what* action is being delegated as (like in the case of the user) the *knowing* of some object or as, more broadly, simply *doing* architecture *a la mode*, in both cases what is clear is that some greater-or-lesser<sup>23</sup> part of architectural labour was translated such that what might otherwise be undertaken by a single, more apparently unitary, figure could be performed amongst the manifestly distributed agency involving practitioner (or multiple practitioners) and text.

Though the particular delegation of competencies distributed amongst book and practitioner provides a basis for its successful dispersion amongst ‘architects’, so too does it translate at least a portion (if not a large portion) of architectural labour such that it is enact-able by ‘non-architects’ (for example, those in adjacent disciplines and occupations, including engineers, builders, and craftsmen, but also dilettantes). Simply put, if architectural labour (or, at least a portion of it) is more-or-less employing a book (‘copying’, in its simplest form), a fairly simple technology to wield, then ‘doing architecture’ seems not so closed to ‘non-architects’. This is, clearly, the same aspect of ‘mobility’ explored in the discussion of the contemporary handbook in chapter four, that same aspect on which the ‘success’ of the artefacts was supposedly, in part, grounded. The divergence in this case of these earlier handbooks being that this same ‘mobility’ renders the handbook and its use problematic.

Returning to Watson & Shove's (2008) example of DIY door-painting provides a useful case to illustrate in what sense the handbook becomes ‘problematic’. Here, the technology of water-based paint, as in the case of other DIY technologies, and its re-distribution of competence (shifting from practitioner to paint) required for painting a door (compared to earlier oil-based paints) works to open up the range of practitioners, ‘DIY-ers’, who may take up this practice. This practice thereby, on this basis, becomes notably more ‘mobile’. However, the most significant ramification of this, in the context of this discussion, is the almost inevitable appropriation of labour from otherwise skilled trades-people. Similarly, the ‘dog-catchers’ brought into the world of architecture by the proliferation of handbooks might make a claim on the capacity to produce ‘architecture’, opening up the possibility for the appropriation of architectural labour. This, obviously, becomes problematic in so far as labour is

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<sup>23</sup> Generally greater, given the dominant mode in which architecture of the day was defined, such as in terms of the orders.

appropriated from those who might be deemed (or deem themselves) 'architects proper', and in as much as there are those who wish to prevent this, in other words who wish to engender the closure of this practice complex.

My intent here is not to say *this* practitioner was an architect, *this* one wasn't, or this practitioner was in this instance 'doing architecture', and this one wasn't (perhaps was a mere charlatan, or maybe performing some similar though distinct and lower activity). Indeed, such an aim would be highly problematic, especially in so far as what architecture *is* emerges from negotiations such as these. My interest is not in making attributions but, rather, in those which are given. Whether or not someone with *Palladio Londinensis* on their desk was 'actually' an architect is not of interest. Rather it is of interest that whatever they were doing was a problematic site in terms of the attribution of 'architecture'.

It is important to emphasise that this 'problematic' status (that is, subject to contestation) is no inherent or necessary characteristic of this agency of architect-and-book or its proliferation.<sup>24</sup> It is only so in as much as there are those who wish to engender the closure of this complex of practices, this itself being an historically emergent process, what might generally be called 'professionalization'.

The professions are the focus of a substantial body of sociological work, entailing both numerous (and contesting) attempts to provide general accounts of their nature (e.g. Abbott 1988; Larson 1979) as well as particular case studies, such as of architecture (e.g. Kaye 1960) and the history of its particular professional institutions, associations, councils and boards of registration, educational institutions and examinations, and legislation, with which it has leveraged professional status.

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<sup>24</sup> It is also worthwhile noting that the conditions of a prominent delegation of labour to texts and 'closed' field of practice and protection of labour do not necessarily elicit a problematic or unstable status for texts and a mode of architectural practice in which they play a salient role. This is well illustrated by the case of the architects of Ancient Egypt. Here, architectural practice of the highest order centred on the adherence to the prescriptions of sacred texts. So much so that, in declaring his status as an architect, Senmut boasts that he "had access to all the writings of the prophets", and the close relationship of architect and book was even articulated in the identity of Seshat, goddess of both architecture and writing (Kostof 2000, pp.5–6). However, the salient characteristic in this situation is the status of the books themselves. They are a technology distinct from that kind of the modern era, far less numerous (with printing absent) and highly guarded (simply inaccessible to other would-be practitioners). Thus, a practice tightly bound to the employment of books was not problematic, due to the impossibility for appropriation, and could even be understood as, in complete reversal of the contemporary manifestation, something defining of architectural practice. The case of the medieval guild system and the closely guarded 'lodge-books' offer a comparable example.



Here, there is not the scope, nor is it the place, to examine in detail the dynamics and various iterations of the professionalization of architecture or of professions in general. It is, however, important to note that similar processes discussed in this chapter also play out within other professions. Those identified as the delegation of labour to artefacts, or technological innovation or ‘commodification’ of knowledge, are identifiable in, for instance, the case of legal forms and the jurisdiction of legal professionals (Abbott 1988, p.146). Within the context of a process where the closure of a jurisdiction of labour is central, an artefact and mode of producing architecture that is accessible to “anyone who can but read English” is, obviously, problematic. The core matter is to whether professions are able to render such dynamics a benefit (providing for routinisation and saving efforts in some tasks) rather than a threat or reduction to their jurisdiction. Here, I propose that this ‘schism’ of architectural labour is a key mechanism in this task.

What is, then, interesting is why, a few centuries after those unstable iterations of the handbook and its use, more contemporary manifestations, through which knowing the user is accomplished via a comparable assemblage involving the delegation of labour to the artefact, are otherwise stable and unproblematic. The contention I pursue in this chapter is that the freedom of these books from contestation, or being derided for “enslav[ing]” architects (Jackson 1921, p.48), is not so on the basis of any kind of fundamental difference in the content or mode of operation of their contemporary iterations. Rather, the change is in the mechanisms for averting the appropriation of labour. These include those ‘institutional’ mechanisms typical of professions, the control of licensure, education, and appellations, but also broader structures of significance sustained within the practice of architecture that, furthermore, underlie and support the sense of these institutional mechanisms – that is, the schism of labour. The following section elaborates on the operation of this schism and the significance of the particular articulation there-of wrought within architectural practice.

## **5.7 ENACTING THE ‘SCHISM’ OF ARCHITECTURAL LABOUR**

Any practice or complex of practices has more or less defining components (perhaps certain materials, products or outcomes, or temporal scope and sequencing, in the case of practices, or particular practices and their salient materials and products in the case of complexes). More accurately, it has those that are

enacted as such in practices, where the practice or complex is identified. This is to say that there is nothing inherent to particular components that make them more or less defining, rather, this develops in the contingency of the practice or complex's history. The strength of this distinction varies amongst different practices and complexes, such that some have evident core-periphery or primary-secondary structures, with core or primary components or characteristics accompanied by components that, though nevertheless essential or recurrent, are regarded as otherwise auxiliary or secondary.

This characteristic of practices and complexes is of particular importance for those that are closely guarded or attempt closure (e.g. 'professions', where this closure is the endeavour to establish and control a sphere of labour). In such cases, it can be employed as a resource in establishing and maintaining this closure and delimiting those that can take part in a practice or complex. By emphatically enacting this primary-secondary distinction, along with the means of demarcation, it provides for the possibility of some activity from which the practice or complex is constituted to be performed (this 'secondary' or 'peripheral' activity, perhaps being that most liable to appropriation) without enabling claims to performances of practices or involvement in complexes to be made, on the basis of their being more 'fundamental' action from which identifications of performances are founded. The means by which this 'primary' action is demarcated is, obviously, of particular significance. A means of demarcation, such as the employment of scarce resources in performances, can serve to significantly limit the access of those who might take part.

To reiterate slightly, there is nothing inherently less 'architectural' about some activities and entities over others. Rather, this categorization is founded on the contingencies of practice and, in this case, the possibilities for averting its appropriation. Criteria defining what is understood to be 'primary' or 'secondary' shift and change as the practice complex, its broader context, and the possibilities for appropriation (such as, but not limited to, novel technologies and material delegation) alter. Thus, we can look to specific modes of demarcating this primary-secondary schism (and, thus, 'architecture' generally) as a particular, historically contingent, mode. Given this, the architect's agency is, though historically contingent, an especially significant criterion.

This thesis has foregrounded the distributed character of agency. However, in social life, agency is also attributed and ascribed (Michael 2017, p.69), as it is here in the case of the architect to certain 'primary' activities. What the characteristics of

these activities *are* is, in the context of this paper, of less significance than the fact that it is established that some form of activity is or may be so ascribed. This capacity for ascribing the action transpiring in practice to a single figure, a locus of agency, is utilized in enacting a reality in which some components of architectural practice are of this character and emanate from the exertion of the agency of the architect. Thus, by construing a domain of primary labour as that in which the agency of the architect is exerted is to define the practice complex in terms of what, simply by definition, cannot be appropriated from a particular practitioner; being an architect and doing architecture are, thus, rendered inseparable, and control over labour then goes, more-or-less, to those who control appellations (this, in the case of professions, being practitioners themselves). The significance of this criterion, amongst the shifting possibilities for appropriation and the desire to avert it, is clear; it is a kind of apotheosis, or last resort (depending on your standpoint), and that it, once established as a legitimate possibility for defining architecture, became prominent, a *sine qua non*, is unsurprising. The numerous sites, contemporary and historical, where the architects-agency-demarcated schism is enacted can be seen as resources by which architectural practice averts impingement by alternate agencies.

This particular mechanism, the schism, thus preserves a 'space' for the handbooks within the 'secondary' domain of practice. This is significant, given that an attempt to expel the handbooks from practice entirely would be a somewhat unlikely if not untenable resolution, considering the successes of these artefacts. Likewise, in this context, the avowed necessity of the contemporary handbooks (Ackerman 1932) should be noted; such a structure provides for the accommodation of this 'necessity' without the undermining of professional jurisdiction (i.e. there is otherwise 'more architectural' work to be done).

To clarify, I am not suggesting that this schism finds its source in the discursive content of the handbooks. It is certainly not its 'origin', though it is one particular site for its reproduction, one of many sites over a long period of time, that have served to enact and ossify this particular reality, on the basis of which it may be occupied by artefacts such as the handbook (and the agencies wrought about them) and ensures their stability. What *is* being suggested, regarding the relation of the handbooks to this schism's origin, is that the longer history of the handbook genre was most certainly a part (one of the technologies and practices that problematized architectural practice via possibilities for appropriation) of the conditions that

established the value of these structures of meaning and significance (and the various means to enact them discursively and non-discursively).

Additionally, it is important to emphasize that the suggestion is not that, given the 'problematic' condition of the emergent possibilities for the appropriation of labour, this 'resolution' simply sprung forth from history and precipitated more-or-less instantaneously in the field of practice. Rather, it is, again, a temporally extended process where-by progressive enactments of this reality, and further innovations in means for this enactment, ossify (that is to say, become more stable and frequent in their reproduction) over time. Nor should such structures of meaning and significance be seen to be entirely novel and emerging 'in response' to such conditions. Instead, it is best to see its emergence as the progressive assembling, reconfiguration, and reinforcing of extant resources and fields of significance at hand into novel formations. These sites for the reproduction of this reality of architectural labour as divided, demarcated by the agency of the architect, are numerous. The remainder of this chapter will outline some particularly salient instances of these.

Beginning with the handbooks, though not the progenitors of this schism, there is a sense in which they can be seen to be, perhaps, innovative compared to the work they do to, more-or-less, simply reproduce this schism itself. This is in the specificities of the 'division' of architectural labour they make, that is, what kinds of action (kinds of knowing and known objects) are to be categorised as 'secondary', and, thus, found within the pages of the handbook. This is of particular significance relative to the object of knowledge at the centre of this study, the user. The fact that the handbooks, thus, situate it within this 'secondary' domain of knowing action may, in a sense, engender its 'stability' (along with the use of the handbooks generally) but this may also, by virtue of the status ascribed to it, work against its 'success' (this will be addressed further in the concluding chapter).

However, the significance of the architect's agency, as underpinning this schism, is discursively enacted in a more pervasive manner within the interpersonal grammar (Halliday & Matthiessen 2014) of these texts. To analyse the interpersonal dimension of language is to examine it as interaction, specifically as exchange (Halliday & Matthiessen 2014, p.134). Within this dimension, or 'metafunction', of language the identities of the interactants and their relations to each other and the exchange are fashioned. An outline of the identity of the architect enacted in the handbook is well illustrated in a sample clause like "Corridors and routes longer than 15 m must have a passing place for two wheelchair users of at least 1.80 m width

and depth” (Neufert & Neufert 2012, p.22). It, firstly, is important to note that it is tasked with the elicitation of action, engendering a certain state of affairs, rather than simply exchanging information; it is a ‘proposal’ rather than a ‘proposition’, in Halliday’s terms (Halliday & Matthiessen 2014, p.139). Further, this action, that which would bring about the prescribed architectural reality (i.e. a certain width of corridors), is evidently to transpire via the reader (the architect) and with their obedience. As the foregoing chapters have described, such is the general character of these texts. They are not simply ‘bare fact’ or ‘information’ to be exchanged, but are embroiled in the elicitation of action (specifically, architects drawing).

That this ‘command’ is not realised in the ‘grammatically congruent’ (Halliday & Matthiessen 2014, p.701) mood of the imperative (“*Make* corridors and...”) is particularly significant. Bare imperatives are relatively scarce within the handbooks.<sup>25</sup> Though, when they do appear they, notably, highlight the status of adjacent elliptical clauses as less explicit commands (e.g. “Bicycle passage width 1.80m; also provide cross-aisles”; Neufert & Neufert 2012, p.383). Instead, a host of linguistic resources are employed to negotiate this orchestration of action without the relatively ‘direct’ and evident impingement on the agency of the addressee by the imperative. The character of written texts are such that realising commands are, because of the ‘distance’ between writer and reader, somewhat distinct from those means employed in spoken interaction (Thompson & Thetela 1995). Common forms like “Could you please...” are somewhat inappropriate for written texts, especially texts like the handbook where an authoritative (techno-scientific) status is to be maintained.

Some of the more general means employed within these texts include the use of the modalised declarative (“[Subject] must have...”), a form of ‘grammatical metaphor’ (Halliday & Matthiessen 2014, p.701) there-by ‘softening’ the explicitly directing nature of the command as articulated by the imperative. In doing so, the clause acquires the ‘flavour’ of the declarative’s congruent function (a statement) and there-by enacts the reader as receiver of information rather than simply follower of command. More importantly, though, the structure of this declarative opens up the functional position of the subject in the clause (otherwise an implicit “you” in the

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<sup>25</sup> A larger quantitative analysis of the proportion of clause types and linguistic features was deemed unproductive relative to the general descriptions offered here. However, such a mode of analysis offers a potentially valuable site for future research, especially in so far as interesting results may be garnered on the shifting enactments of the ‘architect’ within texts over architectural history.

imperative). Thus, although the action prescribed must transpire through the architect, the position of the subject can instead be occupied by an entity otherwise involved in the action (i.e. “Corridors and...”). Consequently, the action is represented in a manner that slights the projection of the agency of the architect (and its evident subordination) in the text. The sum of these grammatical features typical of the contemporary handbook thereby ensures that the architect enacted in the text is a ‘free agent’.

Thus, to reframe this analysis slightly, the problematic status of the manifestly distributed agency of the architect-and-book is not *only* negotiated in the ascription of a ‘secondary’ status within a schism of labour. Additionally, linguistic resources are employed such that, in so far as the architect has to engage in the ‘necessary evil’ of this less-than-architectural activity, they are enacted as, at least, not simply the slave of the text.

The specificity of this character is immediately evident from even a cursory comparison with some of the earliest handbooks and their treatment of that core topic, ‘the orders’. Here, extended passages of the kind “Divide the height of Scapus, into 3 partes... Then draw downe... Then measure from...” (Shute 1912) are frequent, and notable not just for their comparatively untempered imperatives but, also, for directly addressing the act of drawing itself (rather than indirectly through those ‘drawing congruent’ matters of architecture).

Though the discursive content of the handbooks has been foregrounded, they also, perhaps primarily, work to enact these realities of architectural labour non-discursively. Its inclusion in those ‘secondary’ activities of architectural labour designates them as such by virtue of the distinct corpus of elements orchestrated (i.e. the inclusion of the handbook). This works in tandem with the division of labour within architectural offices, the handbook’s distribution serving to demarcate such divisions. A hierarchy in temporal sequencing is also enacted by the acquisition and use of the handbook. The employment of the handbooks as a ‘time saving’ device in ‘secondary’ labour that is temporally ‘squeezed’ (Southerton 2003) serves to enact the privileged status of other ‘primary’ activities (‘design’) for which time is saved (or, espoused to be).

Moving beyond the handbook, an especially notable site for the reproduction of this schism of architectural labour is, as just alluded to, the structure of labour in architectural offices. A salient division of labour, embodied in a hierarchy of office

members, serves to enact this schism. This is a long-standing characteristic of architectural practice. Early iterations include the division of labour between master and pupil. Whether the more formal variation of articulated pupillage found in full force in Victorian Britain (Briggs 1927, p.352) or the 'architectural families' of the Italian Renaissance (p.163), the system is one of a principal creative agency, to whom authorship is ascribed,<sup>26</sup> assisted by a host of individuals in tutelage and providing labour in the form of the production of drawings, models, and other materials to aid in exerting this agency. This role of those individuals assisting architect-designers was further articulated and defined in the late 19<sup>th</sup> and early 20<sup>th</sup> century where a distinction was more firmly established between those working producing drawings and similar products for the principal designer with the expectation of progressing to the status of architect ('architects-in-training'), and those for whom 'draftsman' was their career, often mapping onto broader class divisions (Johnston (2008).

Though two divided classes of practitioners are less evident in contemporary large-scale firms, where numerous roles and specialisations accommodate hundreds of employees, this schism of labour still persists in so far as there are those in whom principal 'creative' agency is primarily located and a host of members who support these in diverse ways. So ingrained is this structure that, even in offices that actively disavow this division, it nevertheless persists. Brown et al. (2010, p.535) describe such 'silent hierarchies' in conditions where junior members are "generally occupied with more mundane tasks associated with, for example, documentation, project management and contracts, and claimed ignorance of the 'the deeper theories' that drove the directors". It is those same tasks deemed liable to be partly delegated to artefacts and being undertaken by a more manifestly distributed agency (and, thus, incongruous with the architect-as-creative-agent) that are delegated to supporting practitioners. The distribution of artefacts serves to demarcate these divisions (Bechky 2003); 'CAD-monkeys' with their computers and rendering software, or assistants shuffling through development controls. Though, to see these only as 'tokens' would be mistaken. Rather, they are the co-ordination of artefact and embodied know-how and dispositions.

This schism in labour is extended in the delegation of such 'less-than-architectural' labour outside the office itself, to external consultants hired to, for

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<sup>26</sup> This was the case even when 'design' work was indeed assigned to supporting staff, the "ghosts" of architectural offices (Briggs 1927, p.380).

example, ensure regulation compliance (Imrie & Street 2011, p.147) or provide sustainability certification, and further ossified in the establishment of the professional roles and organisations for this labour. Similarly, separate creative 'design' labour and 'production' divisions within firms may be further articulated in the co-ordination of two or more architectural firms to complete a single project, with one firm providing the principal 'design' labour and a second the (far less prestigious) labour required to bring the design to and through construction phase (Cuff 1992b).

Perhaps equally significant as a site for the reproduction of this schism is architectural education in its institutionalised form. The standard structure for units of study in university level programmes is of core 'studio' design units (Cuff 1992a, pp.44–45), the "Queen Mother" (Esherick 1984, p.27) of architectural programmes, most frequently given a higher weighting of hours, and accompanied by a number of varying additional units covering topics such as building technology, communication techniques, and architectural history, drawn on in the design work undertaken in studio units. Such studio units, with their "emphasis on individual achievement" (Larson 2016, p.77) and exclusion of other matters for the nurturing of "creative freedom" (Imrie & Street 2011, p.130), are the site for the enculturation of practitioners and the embodiment of this division of practice and the importance of creative agency into the dispositions of novice architects and their resultant understanding of their work.

That a primary defining characteristic of the practice of architecture is the exercise of a creative, expressive, 'artistic' capacity, or a unique agency realised in the more obscure portions of 'design', is such a pervasive notion that its contingency needs to be emphasized - it is not necessarily the case that 'architecture' is such and is the result of active construction. Though the overwhelming predominance of the architect's agency as *sine qua non* of architecture is relatively more novel, this is, however, not to say that sites for enacting this manner of defining architecture generally were previously entirely absent. One can locate its presence, at least in the history of the modern iteration of the architect, at the beginning of the Italian renaissance when the figure of the architect emerged from the structures of the medieval guild. A notable articulation of this is in the early proto-discipline of architectural history. Here, architects were dealt with amongst and in the same manner as artists, with the emphasis on the creative and expressive agency of the individual that this entailed. This manifested in the primary mode and product of this historical practice, the artist biography, of which Vasari's *Lives* is paradigmatic



(Leach 2010, pp.19–23). Though modes of conducting art history varied over the centuries, this rendering of the architect-as-artist (and of architecture as expressive or creative product of this agent) wrought within historical work on architecture persisted in such mundane sites as the fact that (until relatively recently) architectural historians were educated within schools of art history (Anderson 1999, p.284).

Contemporary iterations of this image are now perhaps most prevalently those articulated in lay discourse, and include the perpetuation of the myth of the ‘hero-architect’ (Cuff 1992a, p.1) in its more recent title the ‘starchitect’, the lone creative genius pursuing their unique vision. The paradigm case continues to be Howard Roark, the protagonist from Ayn Rand’s *The Fountainhead*. The reproduction of this myth is all the more important in as much as it provides a resource, particularly in tandem with ‘iconic’ architectures, to be employed in the pursuit of capital (Sklair 2005).

The construction of this reality of architectural labour that has been labelled the ‘schism’ of practice should be understood as the slow accretion of and innovation in novel sites for the enactment and reproduction of this reality. Sites include those outlined above, but also innumerable other venues, both discursive and non-discursive: the continued prominence of the architect-as-author and the explanatory unifying ‘idea’ in the genre of the ‘building review’; the fetishisation or otherwise inflated significance of the sketch (e.g. rendered as purchasable commodity) in which the ‘creative genius’ of the architect is apparently manifest; brochures advertising university programmes to prospective students; the architectural competition (see Larson 1994); the proliferation of exhibitions and architectural collections within art institutions (e.g. MOMA); architectural prizes and awards (the highest, the Pritzker, notably being awarded to individuals, rather than firms); but also, as Larson (2016, p.60) keenly notes, the work of sociologists who unwittingly reproduce the architect-as-artist and ignore the less romantic domains of the profession. It is on the basis of the extended constellation of these innumerable venues that the structures of significance that provide the basis for the stability and, thus, successful accomplishment of knowing the user with the handbook are sustained.

## **5.8 CONCLUDING REMARKS**

Building on the account offered in chapter four, this chapter has posited that also wrought in this assemblage, and equally necessary for the accomplishment of

knowing, is a body of ascribed meanings and its place within wider structures of significance found in architectural practice. A specific segment of this domain of ascribed meaning and significance provided the focus for the analysis of the contemporary handbooks and history of these artefacts. This was the reality of architectural practice identified as a 'schism' of labour, where-in activity is divided into a hierarchy of 'primary' and 'secondary' on the basis of the demarcating criterion of the exertion of the architect's agency, and in which the handbook and the knowing assemblage of which it is part is cast in a 'secondary' status and, there-by, more-or-less unproblematic within this broader structure of significance.

In turning to the historicity of the agency wrought about the handbook I positioned this schism as the outcome of a history centring on the emergent possibilities for the appropriation of architectural labour, in which the broader genre of handbooks itself played a significant role. I posited this schism emerged from this history as a means by which architectural labour is protected from appropriation, such as by 'non-architects' with the aid of the problematic figurations of agency of the architect-and-book. Its persistence into contemporary practice and its character is such that it necessitates the knowing assemblage of the contemporary handbook acquires a status as 'secondary' labour, subsidiary to that action in which the agency of the architect is manifestly exerted. The reproduction by the handbooks of this structure of significance in which they (and artefacts and modes of action like them) are rendered stable and unproblematic in the practice complex of architecture is, thus, a mechanism by which they contribute to establishing the ground for their own stability as artefacts and the successful accomplishment of knowing the user.

The facet of this account to be emphasised is that the accomplishment of knowing in architectural practice is made on the basis of the establishment and stabilization of more general modes of action that are wrought over an extended periods of time and innumerable scenes of action. The 'integration of knowledge' is never simply the movement of some discrete or autonomous entity into a sphere of practice where it is then 'employed' or 'applied', but is the construction of assemblages through which knowing action transpires. Even the most ubiquitous artefacts and apparently mundane action of knowing are only so on the basis of work that establishes the viability and stability of such action. Often, as in the case of knowing the user with the handbook, this involves the extension or modulation of extant configurations of practice which themselves have a specificity and historicity that bears on the character of the knowing accomplished, such as the kinds of

meaning ascribed to it. In this case, this is so in the 'secondary' status ascribed to 'knowing the user' accomplished with of the handbook, within a broader schism of architectural labour.

## CONCLUSION

*Socrates... went on to say: "Tell me Euthydemus, what kind of goodness do you want to get by collecting these books?"*

*And as Euthydemus was silent, considering what answer to give, "Possibly you want to be a doctor?" he guessed: "Medical treatises alone make a large collection."*

*"Oh no, not at all."*

*"But perhaps you wish to be an architect? One needs a well stored mind for that too." (Xenophon 1923, p.275)*

As Socrates' brief characterisation indicates, these three characters, the architect, the book, and knowledge, have long been intertwined. In this thesis, I have examined this trio in the context of their entanglement with a fourth character, the 'user'. This final chapter will recap the conclusions made within the body of the thesis, before synthesising and elaborating these while drawing out implications and potential ground for further research.

The research I undertook as the basis for this thesis was directed by the aim of investigating how 'knowing the user' is accomplished with the architectural 'handbook', and how such accomplishments are made generally present or spatio-temporally dispersed in their reproduction throughout architectural practice. This question has been addressed by casting it in terms of a specific conception of knowledge-as-ability (Hetherington 2011) and of the composition of 'knowing assemblages' in practices, outlined in section 2.3. The core of this study comprised examining the composition of this knowing assemblage wrought about the handbook: analysing its elements, the associations orchestrated between them, its specificity, and its historicity. In doing so I also attend to how establishing such successes in accomplishing knowing, within this specific context of practice, bears on the particular character or shape of the knowing accomplished. This, additionally, was framed by the parallel question of what it means (that is, the ramifications, implications, and effects wrought) for such 'knowing the user' to be accomplished in architectural labour.

This last question was addressed first, in general terms, within chapter three. Introducing what the ‘user’ *is* and drawing on selected moments from its history served to elucidate what it means for an ‘object of knowledge’ to be constituted within architectural practice. I framed such a process in terms of the crowd of jostling agencies found within architectural projects, situating knowing and ‘objects of knowledge’ as embroiled within such a condition and, itself, a matter of agency. On this basis, I asserted the pertinence of investigating the manner in which the knowing of this somewhat less recalcitrant object, the user, may be shaped by this condition, given the apparent bearing of the agency of the architect and their mediating as ‘knower’.

In chapter four, I began the account of the knowing assemblage wrought about the contemporary architectural handbook, working from the results of content analysis and with a focus on the dimension of ‘mobility’. The picture of this assemblage included handbooks and architects (specifically ‘architects-as-transcribers’), but also pens, scale rules, paper, and drawing boards or computers, CAD software, keyboards, and mice, that is, the entities found otherwise orchestrated within practices of drawing. I posited that this knowing assemblage achieves a mobility based on specific distributions of competencies (particularly the delegation of labour to more logistically mobile artefacts – the handbook) in tandem with prescribed elements being predominantly native to core drawing practices (notably, the drawing competencies of the ‘architect-as-transcriber’), thereby utilizing extant and well dispersed potential sites of knowing within architectural labour and reconfiguring and embedding within these rather than establishing new practices entirely. Consequently, the distribution of components required for the composition of this knowing assemblage is ensured and provides the ground for the spatio-temporal dispersion and reproduction of successful accomplishments of knowing the user. Additionally, I posited that this is reflected in the character of the knowing constituted, given that this embedding necessitates a congruence with the realities of the site of reception, drawing practices, and the elements found there. In this case, this manifests as the ‘spatial’ rendering of the user in the shift towards congruence with drawing, as identified within the results of content analysis.

Chapter five extended this account, where I proposed, drawing from the results of discourse analysis of contemporary handbooks, that in addition to those requisite elements outlined in chapter four were equally necessary components in the accomplishment of knowing the user, namely, a host of meanings ascribed to the

handbook's use situated within broader structures of significance. These were those that cast this knowing assemblage as a kind of 'secondary' activity. These were of interest in so far as they engender the stability (unproblematic and uncontentious status) and, thus, underlie the successful performances of this mode of knowing the user set within a hierarchy of architectural labour that I labelled the 'schism' of architectural practice. Additionally, in this chapter I turned to a previously bracketed concern with the historicity of this knowing assemblage in which the handbook is embroiled. Here, looking also to a broader range and longer history of 'handbooks', I posited that these texts were themselves a part of the history involving a project of the closure of practice, and the protection of architectural labour from appropriation, which established the ground for the emergence of this prominent schism and, on the basis of which, a problematic status of the agency of architect-and-book was averted.

Accompanying my formulation of the research questions, and situated in the context of the project of 'user-centred' architecture, was the frame of 'successes' or 'obstacles' to efforts to establish 'knowing the user' within architectural practice. With this frame in mind, and looking to parts of the case analysed, one might expect it would be sensible to, crudely, 'recommend' techniques for the successful 'incorporation of knowledge' via the delegation of knowing action to technologies, such as handbooks, in a fashion that draws on extant configurations of architectural practice and the elements and affordances there-of. The immediate caveat to this, implied in chapter four, would be suggesting cautiousness given that such a process may bear on the character of the knowing thus constituted, and might as so be deemed 'limited' or 'lacking', and account for a less than diverse character of knowing the user in practice generally.

However, this is obviously not the picture offered in the foregoing chapters; I illustrate the matter to be more complex than this. For instance, that same dimension of 'mobility' and dynamics of delegation identified in particular compositions of knowing as underlying its apparent 'success' is also, in the context of a specific practice complex, equally a ground for a problematic status that potentially undermines successfully accomplishing knowing the user. In the analysis I present, the 'success' of accomplishing knowing, and of such accomplishments being spatio-temporally well distributed, stable, and reproduced, cuts across multiple dimensions in a manner that renders attempts to reduce 'success' to any single or persistent dimensions, or the identification of 'general obstacles', vacuous. Simply put, the

performance of knowing is rather messy, and in this thesis I have sought, primarily, to indicate this character.

However, some tentative generalisations might be possible. Though 'antagonism' may be too strong, there is certainly not a necessary congruence between the practice of architecture and knowing, or at least certain modes there-of. Instead, knowing has been shown to be entangled in complex issues, such as the ascription of agency and the power to exert effect and maintain control in a particular domain of labour, such that quite fundamental ways in which architectural practice is defined and sustained render certain modes of knowing (specifically, those in which agency is manifestly distributed) less than congruent with the practice of architecture. This case of the knowing assemblage wrought about the handbook has shown that it would seem reasonable to suggest that one is wary in attributing to architecture an 'enthusiasm' for, or general openness towards, knowledge (or novel knowledge), that one might reasonably expect is implied by architecture's status as 'knowledge-based' profession (on the problematic status of such ascriptions, see Alvesson 2001).

I have made efforts in this thesis to illustrate that not all knowing is equal. This is to reiterate that the composition of knowing assemblages is diverse. However, it is also to emphasise that, on the basis of this diversity, there are variations in the kinds of significance and value ascribed to particular modes of knowing over others in certain contexts of practice. As in the case examined, the realities of the manner of composition of this particular knowing assemblage are such that its manifestly distributed character elicits ascriptions of meanings within broader structures of significance that stabilise but render it as of a 'secondary' character. Conversely, given these structures of significance, some knowing is of more 'value' to the figure of the architect and the reproduction of the practice complex of architecture in so far as it is congruent with and provides a resource to enact the status of their agency and, there-by, reproduce those structures that underpin the maintenance of their control over a jurisdiction of labour.

Such a condition demands critical examination in so far as this resultant 'stabilisation' of this mode of knowing, though underlying the successful accomplishment of knowing the user in practice, may also serve as grounds for its displacement. That is, on the basis of its 'secondary' status, this mode of knowing the user (through which the agency of this object, the user, might be constituted) may be displaced by other modes of knowing the user, or even of knowing some other object (recalling the jostling of agents in the architectural project), that, instead, work to

enact the primacy of the architect's agency. This may be regarded as problematic, to that extent that it might dismiss otherwise more 'authoritative' or 'objective' knowledge in favour of the 'intuitions' of the architect. As to whether or not this is what occurs in practice remains to be seen and is, thus, a fruitful space for further research. This hypothesis does, however, appear to find some support in the descriptions of practice otherwise provided (see, for example, architects' dismissal of evidence-based guidelines in Buse et al. 2017, p.1443).

Given that a particular mode of action and knowing is privileged in architecture, this is, moreover, a reason to examine those other diverse and less dominant modes of knowing (and action generally), such as those constituted in assemblages of orchestrated humans and nonhumans hybrids like the archi-text. Observation-based research within the walls of architectural offices may, turning to those jostling agencies around meeting and drawing tables, serve to draw out a finer account of the manner in which variations in the meaning and significance ascribed to different modes by which agents are mediated (different knowing assemblages) bears on the strength of the voices that come to shape built works.

Pursuing these questions and the results attained has, in tandem, been directed by the goal of establishing ground and direction for further research and, parallel to this, evaluating the methods employed as a means for providing this direction of future research. The preceding material has indicated it has been fruitful in identifying possible avenues for future research into the knowing orchestrated in architectural practice. Though, it is only in undertaking such further research that this aspect of the utility of the research reported here will truly be 'tested'. More broadly, however, I wish to propose that, of most value in orienting further studies, is this case's illustration of and contribution to a particular conception of knowledge to be employed in social research: knowledge as a practical ability accomplished amongst extended assemblages (Gherardi & Nicolini 2000; Hetherington 2011, 2012; Law 2000; Nicolini 2011; Orlikowski 2002, 2006), "not a substance but a capability produced and reproduced in recurrent social practices" (Orlikowski 2006, p.460). This is a view that is alert to the fact that for the architect to 'know' something, whether an object like the 'user' or the very building they are working to produce (Yaneva 2009b), they must enlist a host of others in their aid.

This picture is one where knowing, and the form and character it takes, can be seen to reside not 'in the heads' of architects but, rather, in the totality of the constellations of practice in which architecture is constituted, and, thereby, bears the



impression of its specificity and historicity. It provides a more fecund alternative to understanding knowing the user than those occasionally reductionist attempts to account for the constitution and character of the user by conceiving of it as those 'homunculi' or 'imaginary companions' in the heads of architects (Ellis & Cuff 1989, p.10) or as an expression of 'ideology' or epochal character (Emmons & Mihalache 2013).

Though examining the 'conceptions' of architects, or the 'representations' in texts, may be valuable, this is merely one component within a broader 'extended knower' or knowing assemblage, in which knowing itself is more properly located. To conceive of knowing and its success as something playing out 'in' practitioners is misconceived. Certainly, attempting to ascertain these 'imagined people' (Kostof 1989) as a means of identifying a site for 'correction' appears mistaken. In as much as we wish to understand knowing, and, perhaps, even wish to alter it (lest we find its extant character or extension lacking), it is, thus, important to take account of the totality of these aforementioned assemblages. The task would, then, not be that of convincing architects to jettison and replace a stubborn person of the mind, or be more 'open' (Fawcett 1996) to novel conceptions, but to reconfigure these complex, messy, and heterogeneous arrays of practice within which the user is truly constituted.

Thus, this picture is also not one that sees the movement of knowing into domains of practice as the transmission of an autonomous or self-contained thing or substance called 'knowledge' from centres of production (be they intrinsic or extrinsic to architecture) to application (Guy & Shove 2000, p.52). This picture of knowing thereby tempers those views which might see the problem of incorporating 'knowledge of the user' into practice as one of simple 'transfer'. This is notably illustrated in recent reports from the Royal Institute of British Architects (RIBA) that cast the underlying problems of a less than ideal relation of architecture to 'research-based knowledge' in terms of 'access', 'finding', 'exchange', and 'dissemination', to be resolved by different, perhaps "more commercial", *means* of transfer (Collins 2014, p.11).

As the RIBA report itself identifies, the literature on 'knowledge practices' in architecture is lacking (Collins 2014, p.6); indeed, this perhaps underlies its perpetuation of this reductionist picture of knowledge. This thesis addresses this lack and, rather than seeing the 'exchange' or 'dissemination' of knowledge 'quanta' (Ibert 2007), sees the extension and translation of knowers, of knowing assemblages, into

new areas of practice. To embed novel knowing or objects of knowledge into the practice of architecture is not, simply, to hand it a new tool or instrument, but is more akin to the addition of a new part to a machine (with the complex reciprocal adjustments, ad-hoc alterations, and messy reconfigurations this implies). There is, in fact, no 'application' of knowledge that is, once 'produced', thereafter simply applied or incorporated. Knowing is always constructed, in the linking up of chains, networks, and assemblages through which knowing action transpires. The shape of which, 'what' is known, is bound far more strongly to the character of extant practice and the 'congruence' of this with it, rather than something that might be called its 'truth' or 'objectivity'.

This question of 'truth', that might be expected in an investigation of knowing, is of less interest and has been more-or-less bracketed here. Certainly, one might take issue with the occasionally dubious character of the knowledge of the user found in the pages of *Architects' Data* or *AGS*,<sup>27</sup> but it is the general mode of knowing (and the ramifications there-of) that cuts across particular instances of knowing (and their relative truth or objectivity) that is of interest here. For the most part, architects are not in the business of knowledge production (that is, most architects, most of the time), and my suggestion is that the 'truth' or 'objectivity' within knowing assemblages is less relevant to their successful accomplishment and spatial-temporal dispersion than their particular manner of composition, their congruence with extant contexts of practice, and their relative success in orchestrating resources and infrastructures for knowing. That is, 'truth', 'objectivity', 'facticity' or similar is no adequate fuel for knowing, nor does it provide the basis for it to be self-propelled into a supposedly truths-accruing 'knowledge-based profession'. In so far as an account of the successful accomplishment of knowing is concerned, recourse is required to other dynamics.

To conclude, it is valuable to return to the scene of jostling agencies that plays out within architectural projects and, again, re-frame knowing as embroiled within this contestation and negotiation. In chapter three, I posited that the significance of the particular manner in which the user is mediated in this process as

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<sup>27</sup> For example, the apparent distortion of the dimensions of the human figure provided within *Architects' Data* by the desire to have them accord with the 'Octametric' System (Vossoughian 2015, p.699), or the less than systematic methods in deriving standard dimensions for *Architectural Graphic Standards* involving the office boy's excursion to find a tall policeman on horseback to measure (Emmons & Mihalache 2013, p.43).

object of knowledge relative to other modes in which it might bear on the project (perhaps through those who make a claim to *be* users) is bound to the status of the agency of the architect. In this thesis I have sought to articulate an account of such accomplishments of knowing at the level of action in architectural labour itself. In doing so, I identified that, even at this level, conflicts of agency play out. Within this particular mode of mediation, 'knowing', the shape of the knowing constituted and the modes of knowing given greater or lesser value are, again, bound to the agency figured as the architect. In enacting this object of knowledge within practice, the architect is to be counted alongside the user as amongst those people built in the process - the hospitableness of the one to the other is certainly no guarantee.

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